THE AMERICAN JOURNAL of PSYCHIATRY

VOLUME 100
NUMBER 3
NOV. 1943

Centennial Meeting
May 15, 16, 17, 18, 1944
Bellevue Stratford Hotel
Philadelphia, Pa.

Official Organ of
THE AMERICAN
PSYCHIATRIC
ASSOCIATION

NOVEMBER CONTENTS 1943

PSYCHOSES OCCURRING IN SOLDIERS DURING THE TRAINING PERIOD[1]

MARGARET HITSCHMAN, M.D., AND ZULEIKA YARRELL, M.D.
New York, N. Y.

One hundred soldiers[2] admitted to the psychiatric division of Bellevue Hospital between January 1942 and January 1943, inclusive, were studied. All of these men had received a Certificate of Disability Discharge; all were residents of New York City. The majority of the soldiers were sent directly to Bellevue from army hospitals. The remainder had been discharged from the army and were later admitted to Bellevue from their homes after an interval of one day to several months. One-third had enlisted and two-thirds had been drafted. Only one had been in combat, and he had been returned from Hawaii.

The cases were classified according to diagnosis. Seventy-eight were schizophrenic; 8 were manic-depressive, of whom 6 were in the depressed phase and 2 were in the manic phase; 6 were cases of psychopathic personality; 4 were psychoneurotic; 1 was mentally defective and 1 was epileptic. There were 2 cases of syphilis of the central nervous system.

Thirty-one of the men had had previous psychiatric treatment and of these, 17 were readmissions to Bellevue Psychiatric Hospital. Excessive alcoholism or mental illness occurred in the immediate families of 32 men.[3]

More than one-half of the soldiers had foreign born parents and of these one-fourth were Italian. The remainder were Russian, Polish, German and Irish in about equal numbers. Sixty-one of the men were Catholic, 23 were Protestant, and 16 were Jewish. Fifteen of the hundred men were colored.

In this paper we will discuss the following:

1. Correlation of length of service with onset of illness
2. Pertinent factors of pre-induction adjustment
3. Rôle of military service in the precipitation of illness
4. Comparison of psychoses in soldiers and civilians of the same age group
5. Psychiatric evaluation of the selectee and criteria for rejection

1. Correlation of Length of Service with Onset of Illness

When length of service was correlated with the time at which the psychoses became manifest, it was found that 70 of the 100 men became sick within the first 5 months of service. Of these, 23 broke down 2 weeks after induction. Within the group of 30 men who became ill after 5 months of service, 17 had been in service one year or more before their illness became manifest.

This analysis further reveals that as the duration of service lengthened, there seemed to be an increase of cases with previous mental illness. While the rate of appearance of patients with previous hospitalization seemed to be constant in absolute figures, in relative figures there was a marked increase because of the decreasing number of potential psychotics. Of 70 men who became ill during the first 5 months of service, 21 per cent had been previously hospitalized. Of 30 who broke down after 5 months, 53 per cent had had histories of previous hospitalization (Fig. 1).

2. Pertinent Factors of Pre-Induction Adjustment

The life histories of the men were studied with regard to economic, social, and psychosexual adjustment before induction.

[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association, Detroit, Michigan, May 10-13, 1943.

From the Psychiatric Division of Bellevue Hospital, and the Department of Psychiatry of New York University College of Medicine, New York, N. Y.

[2] One hundred and eight soldiers were studied but 8 were eliminated because of inadequate history. This exclusion did not alter the general conclusions.

[3] Siblings or parents, except in two cases where an aunt or uncle had been mentally sick.

One group was composed of men who had a history of hospitalization in private or state mental institutions, or had obtained treatment by a psychiatrist outside of the hospital. A second group consisted of men who were workers. The remaining individuals were considered to have made an adequate adjustment before entering the army.

Of the 100 men examined, 38 had made a good adjustment, 28 a poor adjustment, and

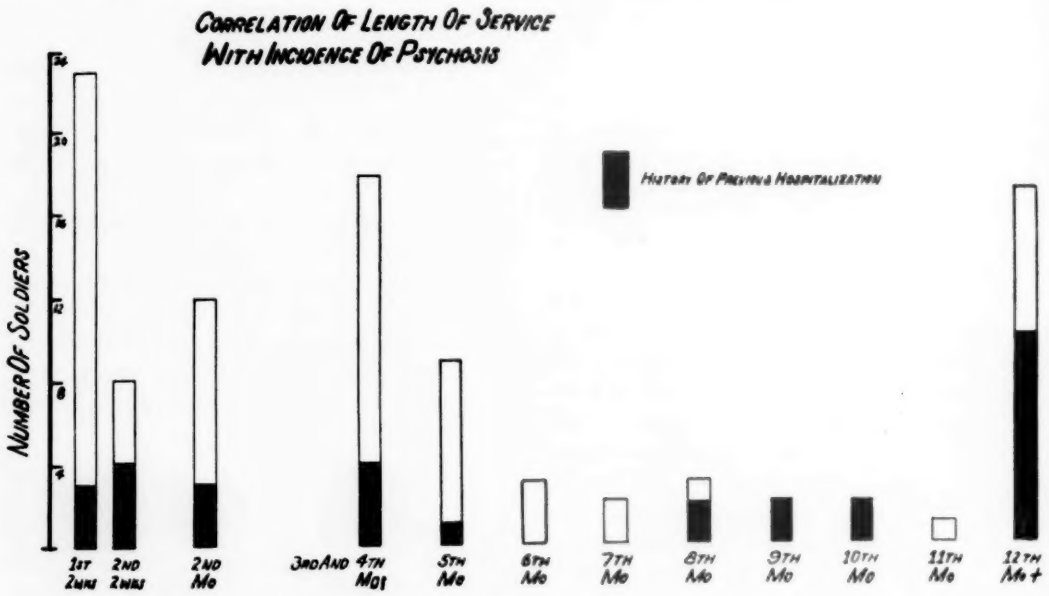


FIG. 1.

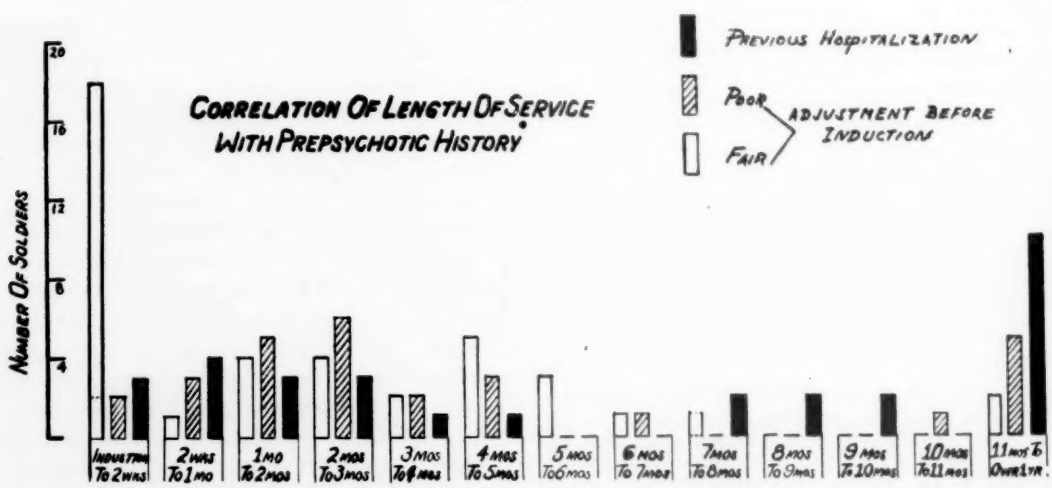


FIG. 2.

considered as having made a poor adjustment prior to induction. One or more of the following conditions were present in their pre-induction history: habitual alcoholism, delinquency, drug addiction, sexual perversions or obvious difficulties in heterosexual adjustments, and frequent changes in jobs due to difficulties with employers and fellow

of the remainder, 31 had been previously hospitalized (Fig. 2).

3. RÔLE OF MILITARY SERVICE IN THE PRECIPITATION OF ILLNESS

An attempt was made to analyze the data in order to determine precipitating situational

factors. It should be understood that this analysis is based on gross environmental factors which occurred with such frequency as to constitute a valid common denominator. With this reservation in mind, four groups were defined. The first consisted of 23 men who became ill during the first two weeks of service. The second comprised a group of 40 men in whom 3 factors recurred prominently. These were: change of assignment, physical illness and family worries. A third group of 8 cases consisted of men who had gone AWOL and after they were brought back and detained in the guard house, exhibited symptoms of mental illness. Finally, there was a fourth group of 29 men in which no clear cut precipitating factor could be determined.

In the first group, those becoming ill during the first two weeks of service, we feel that induction into military service was a precipitating factor. In the second group, the greatest number of cases became manifest following a change in army assignment such as transfer to a different branch of service, a promotion, the first experience on the rifle range or impending embarkation. In these cases the question arises as to whether the situational change with the pressure of new responsibilities actually precipitated an illness in a predisposed individual or whether such changes in assignment provided an occasion for scrutiny of performance and behavior of the soldier thereby bringing abnormalities to the attention of the supervising personnel. We included in this group a number of men whose mental symptoms were detected after they were admitted to station hospitals for somatic complaints, such as weakness, nausea and insomnia, or for minor injuries or operations. These physical complaints might have constituted prodromal symptoms of the mental illness, but in addition, they were responsible for bringing the men under closer observation resulting in the detection of the mental illness. Similarly in this group the army life was a precipitating factor. The same is true for the third group, those men who were sent to the station hospital after detention in the guardhouse. Undoubtedly the AWOL was already a symptom of the illness and the detention in the guardhouse ignited a latent process.

There remains for discussion the group of men whose illness was associated with difficult home situations, such as worries about illness in the family or financial difficulties. Frequently the illness became apparent at the time of negotiations respecting furloughs, or immediately after return from leave. It was significant that in the illnesses of this group, one-half represented mood and character disturbances, such as manic-depressive psychoses, psychoses with psychopathic personality and psychoneuroses. Here undoubtedly military service did not play a major rôle in the precipitation of the illness but provided a setting which entered into the content of the illness.

4. Comparison of Psychoses in Soldiers and Civilians of the Same Age Group

Civilian male patients of draft age, admitted to Bellevue Psychiatric Hospital during the same period as the 100 soldiers, were studied and comparisons were made. It became apparent that there was nothing clinically unique about the psychoses which occurred in the soldiers. The incidence of the schizophrenic psychoses among both groups was about equal. Moreover, the percentage of readmissions to mental hospitals and of recurrences of mental disease were essentially the same. Despite the fact that the ratio of military cases to the total military population was not known, the intrinsic similarity of the statistics in both the military and civilian group was striking. This suggests the conclusion that the army and its varied psychological significance did not alter the incidence of types of psychoses in this particular age group. Its rôle as a precipitating factor has been discussed.

The following discussion of the course of illness and disposition of the men after observation at Bellevue is limited to the group who required further hospitalization after discharge from the army. The time which elapsed between the manifestation of the psychosis and hospitalization at Bellevue ranged from 6 weeks to 6 months. Sixty-eight of the hundred men had to be committed to mental hospitals; 62 of these were unimproved; 6 had improved. No case in the entire group had achieved full psychiatric recovery. 11 of those who were discharged

to their families, exhibited social recovery. Twenty had improved but were still psychotic and were discharged against advice at the insistence of the family.

5. Psychiatric Evaluation of the Selectee and Criteria for Rejection

In view of the fact that 31 of the 100 men had had previous mental illnesses requiring hospitalization, it would seem wise to reject all such cases. Even though it is possible that some may have no recurrence while in the army, they still remain a poor risk. Of great significance is the fact that these men tend to break down later in the course of their army service. As a result, their loss to the armed forces as useful soldiers carries with it a correspondingly greater loss in money and material. Moreover, men whose preinduction history indicated poor adjustment, similarly are liabilities. These men, as well as those previously hospitalized, could be screened out by means of social investigation.

The majority who became ill within the first 2 weeks after induction were apparently well adjusted before entering military service. It would seem that even with the most careful psychiatric examination these men could not have been detected and eliminated.

Although this report is not primarily concerned with the symptomatologic details of the cases studied, observations on this particular group are noteworthy. The greater part of the 23 men who became ill during the first two weeks of service exhibited psychoses which were similar to those which were described by Duval and Hoffman(1) and also mentioned by Simon and Hagen(2). The picture is characterized by an acute onset with bewilderment and confusion, a tendency to catatonic posturing and blocking in thinking and in speech. The patients react to vivid auditory hallucinations of derogatory content. These generally refer to delusional homosexual activities. The patients appear to be in terror of a threatening violent death and believe that members of their family are also in danger or already dead. The mood is one of hopelessness and impending disaster. Contact with the environment is very poor. In short, they present the syndrome of an acute schizophrenic reaction. It should be stressed, however, that while this reaction-pattern was quite typical for this group, there was nothing specifically characteristic or unique about it. This familiar syndrome is also observed among civilians of the same age-group in their first attack.

The psychoses which occur among men with a longer period of service are more like those of the relapsing schizophrenic with marked dissociation of affect, and the typical thinking disturbances. Two histories are briefly presented to illustrate these psychoses:

J. M., 23 years old, white, single, born in the United States of Irish parentage. Up to induction he was apparently well adjusted. He lived with his parents and had a good school and work record. He was interested in sports and had many friends. He was willing to go into the army when he received his notice for induction. However, after a few days at the reception-center, he suddenly became bewildered, stared into space, spoke very little and seemed frightened. He thought that the other men made remarks about him because of his small penis and he heard voices calling him bad names. He feared that his life was threatened and that his family had been killed in an accident. These symptoms were still present 6 weeks later when he arrived at Bellevue.

The next history gives an example of a schizophrenic psychosis which recurred after a 12 year remission.

D. M., a 30-year-old white male of American stock, had served 13 months as a private in the coast-artillery before he had to be hospitalized. At the age of 18 he had been committed to a state hospital with the diagnosis of schizophrenia. During his recent stay at Bellevue Hospital he was resistive, hostile and profane. His thinking and speech were blocked and his affect inappropriate. He was suspicious and full of illogical recriminations against the army. He had to be committed again.

The data assembled in this study, led us to the following suggestions for lowering psychiatric casualties during military service:

1. The 59 men who showed previous maladjustment, 31 even necessitating previous hospitalization, would have been eliminated by social investigation prior to induction. Recently Selective Service Headquarters of New York City suggested to the local boards that they check the files of the State Department of Mental Hygiene in an effort to eliminate those registrants with previous

hospitalizations.[4] This seems to us a most necessary and useful procedure. Inasmuch as it would be technically impossible to carry out a detailed social investigation of all men who come up for induction, it would be most desirable to have police and social service agency records. This would provide an additional screening device. This has also been suggested by Simon, Hagan, and Hall(3).

2. It has been suggested that some form of 3 months probationary period be instituted as a kind of pre-induction military service(4). The object is to avoid Veteran's responsibility on the part of the government and to facilitate early recognition and disposition of the psychiatrically unfit selectees. Our study suggests that 3 months would be a suitable period. The majority of our casualties occurred within this period.

3. The suggestion of Lieutenant Colonel Stilwell and Major Schreiber(5) for a special training unit in a replacement training center where soldiers showing any aberrations of behavior may be more closely observed and seen by psychiatrists for future disposition, we consider a valuable contribution.

4. A psychiatric examination during or after the first 3 months of service of those soldiers not definitely mentally sick but who show unusual difficulties in adjustment to army life, would help to eliminate future psychiatric casualties.

Summary

1. One hundred soldiers admitted to Bellevue Psychiatric Hospital during 1942 were studied.

2. Men who had previous hospitalizations for mental illness and those showing other signs of maladjustment prior to induction tended to break down after a longer period of military service in contrast to men whose pre-induction adjustment was adequate.

3. Army life provides precipitating factors which react upon a predisposed individual. However certain situational factors provide an occasion to bring abnormal behavior more closely to the attention of supervising personnel and thereby contribute to the detection of mental symptoms.

4. It was shown that the incidence of schizophrenia in men during military service and in civilian patients of the same age group was about equal. These findings applied to first attacks as well as recurrences. No qualitative difference in the psychoses of civilians and soldiers was found.

5. The following suggestions for lowering the incidence of psychiatric casualties during military service are made:

A. Social investigation consisting of checking files of the Departments of Mental Hygiene to detect and eliminate selectees with previous mental hospitalizations

B. An investigation of the police and social agency records of the selectees

C. A three months' probationary period before actual induction into military service

D. Organization of a special training unit in the replacement training centers

E. A psychiatric examination during or after three months of military service of soldiers with poor army adjustment

[4] Information obtained from Selective Service Headquarters of New York City.

BIBLIOGRAPHY

1. Duval, A. M., and Hoffman, J. L. Dementia præcox in military life as compared with dementia præcox in civil life. War Med., 1: 855-862, Nov. 41.

2. Simon, A., and Hagan, M. Social data in psychiatric casualties in the armed services. Am. J. Psych., **99**: 348-353, Nov. 42.

3. Simon, A., Hagan, M., and Hall, R. W. A study of specific data in the lives of 183 veterans admitted to St. Elizabeth's Hospital. War Medicine, 1: 387-391, May 41.

4. Flicker, D. J., and Coleman, O. H. Military discharge for inadequacy. New Eng. J. Med., **228**: 48-52, Jan. 14, 1943.

5. Stilwell, L. E., and Schreiber, J. Neuropsychiatric program for a replacement training center. War Med., **3**: 20-29, Jan. 43.

A REVIEW OF CASES OF VETERANS OF WORLD WAR II DISCHARGED WITH NEUROPSYCHIATRIC DIAGNOSES[1]

CHARLES B. HUBER, M.D.

Veterans Administration Facility, Pittsburgh, Pa.

It has been my privilege during the past year to examine 100 veterans of World War II from January 26, 1942, to February 23, 1943. All the examinations were made in the out-patient department with the exception of a few cases in which immediate care was required in our special section of the hospital. These few cases were cared for under constant supervision until arrangements could be made for their transfer to designated hospitals for further care, observation and diagnosis.

The Veterans' Facility at Pittsburgh, Pa., is situated inland. Of the veterans examined and reported in this paper, one had actual combat duty; all the others were either on active duty or had been discharged from the Army or Navy without combat duty. These veterans are examined in response to a request from an adjudication agency of the Veterans Administration in connection with a claim properly presented by the veteran, usually with the aid of a representative of one of the service organizations. An effort is made in each case to have at hand at the time of the examination the claims file which contains the Army clinical records and usually a Red Cross social service history. These data are reviewed before the veteran is examined and notations as required are made.

The average age of the 100 veterans examined was 25.1 years. The minimum age was 18, and the maximum 39 (see Fig. 1).

The marital status of these men was: 13 per cent married, 87 per cent single. In the 20-24 year group, 4 were married, 2 having one child each; in the 25-29 year group, 5 were married, 2 had one child each, 1 was divorced; in the 30-34 year group, 2 were married, 1 was childless, just recently having been married, 1 had one child, and 1 had been divorced, having no children. In the 35 to 39 year group, 2 were married,

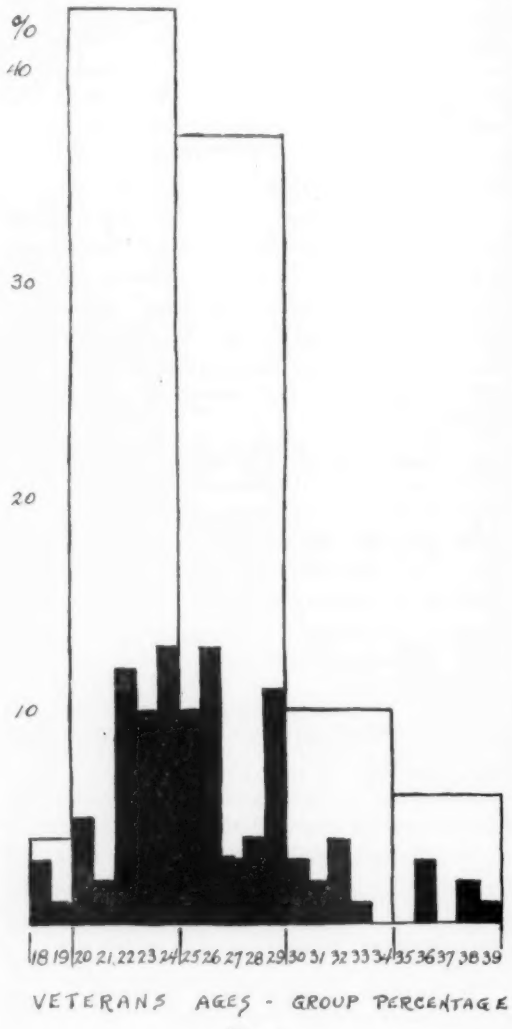


FIG. 1.

the oldest having 3 children, the other 1 child. There were 9 children altogether.

The family histories reveal that 4 fathers and 4 mothers died of cancer; 4 fathers and 1 mother died of pneumonia; 2 fathers and

[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association, Detroit, Michigan, May 10-13, 1943.

Published with permission of the medical director, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the author.

3 mothers died of stroke; 3 fathers died as chronic alcoholics; 2 fathers were accidentally killed; 2 died of tuberculosis; 1 died of asthma; 1 father and mother of fractured skulls; 1 father from a ruptured appendix; 1 from dropsy, and 1 from injury to the spine; 1 mother died following childbirth, and 1 of ulcer of the stomach. Of the parents mentally ill—2 mothers were patients in state hospitals, and 1 mother was stated to be nervous and restless. Two surviving mothers were ill, one having diabetes and the other pernicious anemia. Of the siblings, 28 brothers and 10 sisters died in infancy; 2 brothers and 1 sister were accidentally killed; 1 brother died of spinal meningitis; 7 brothers and 5 sisters of pneumonia; 2 brothers of diphtheria; 1 brother and 4 sisters of influenza; 1 brother of typhoid fever; 1 brother and sister of whooping cough; 2 brothers of tuberculosis; 1 sister of intestinal obstruction; 2 sisters of infantile paralysis. One sister was said to be excitable, and one sister had healed tuberculosis; 1 sister was in a state hospital. There were 216 brothers and 182 sisters and one step-brother and sister living and well. Five maternal grandfathers and 1 maternal grandmother died of cancer; 2 paternal grandparents died of a stroke; 1 maternal aunt was in a mental hospital; 1 paternal uncle in a state hospital; 1 paternal cousin was reported as mentally ill; 1 paternal aunt was living, having diabetes; 1 maternal grandmother died of diabetes.

The apparent lack of tuberculosis, diabetes and mental disease, with a few instances of grandparents dying of cancer is noteworthy.

With reference to the habits of the patients examined, 16 stated that they did not smoke or drink; 14 smoked a pack of cigarettes a day; 14 smoked a pack of cigarettes and drank beer moderately; 13 admitted smoking a pack of cigarettes a day as well as drinking beer and whiskey moderately; 11 admitted drinking whiskey excessively; 2 admitted arrest. The remainder smoked and drank beer or whiskey occasionally.

The previous educational advantages of these men are represented in Fig. 2.

In the *New York Times* of 3-28-43, Benjamin Fine writes:

> Through the Adjutant General's office in Washington, a Soldiers' Reader and other materials have been prepared. Experimentally the Army is accepting 5 per cent of the illiterates and is attempting to teach them enough reading and writing to make good soldiers out of them. It is estimated that close to 750,000 potential soldiers cannot be utilized because they are functionally illiterate. That is they have less than the fourth grade standard established by the Army. Persons with less education than that generally do not fit into the military program.

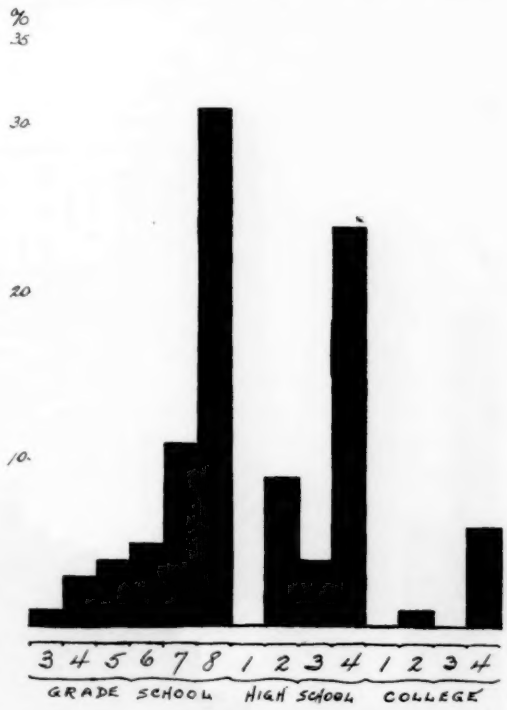


FIG. 2.—Educational advantages.

Of the veterans examined one was found to be mentally ill and diagnosed psychosis with mental deficiency; 8 were believed to be mentally deficient in addition to other diagnoses made.

The occupations of the patients varied greatly; 32 were unemployed, 16 were laborers, 6 miners, 3 farmers, 1 a caretaker of a farm, 2 railroad men, 3 salesmen, 3 clerks, 3 bricklayers, 2 watchmen, and 2 were engineer's helpers; in addition there were 1 each of the following: a counterman and dishwasher, mailcarrier, truckman,

teacher, boiler maker's helper, material inspector, a spotter and welder, a body and fender finisher, a distributor, a vice hand in a steel mill, an annealer of steel, a stoker's helper, a stonecutter, an interior decorator, a woodcutter, a carpenter, an assistant mortician, a hospital attendant, an electrician, a timekeeper, a tool checker, a filer, a tube mill worker, an observer in a steel mill, a riveter, a garage owner, and a tavern and restaurant owner.

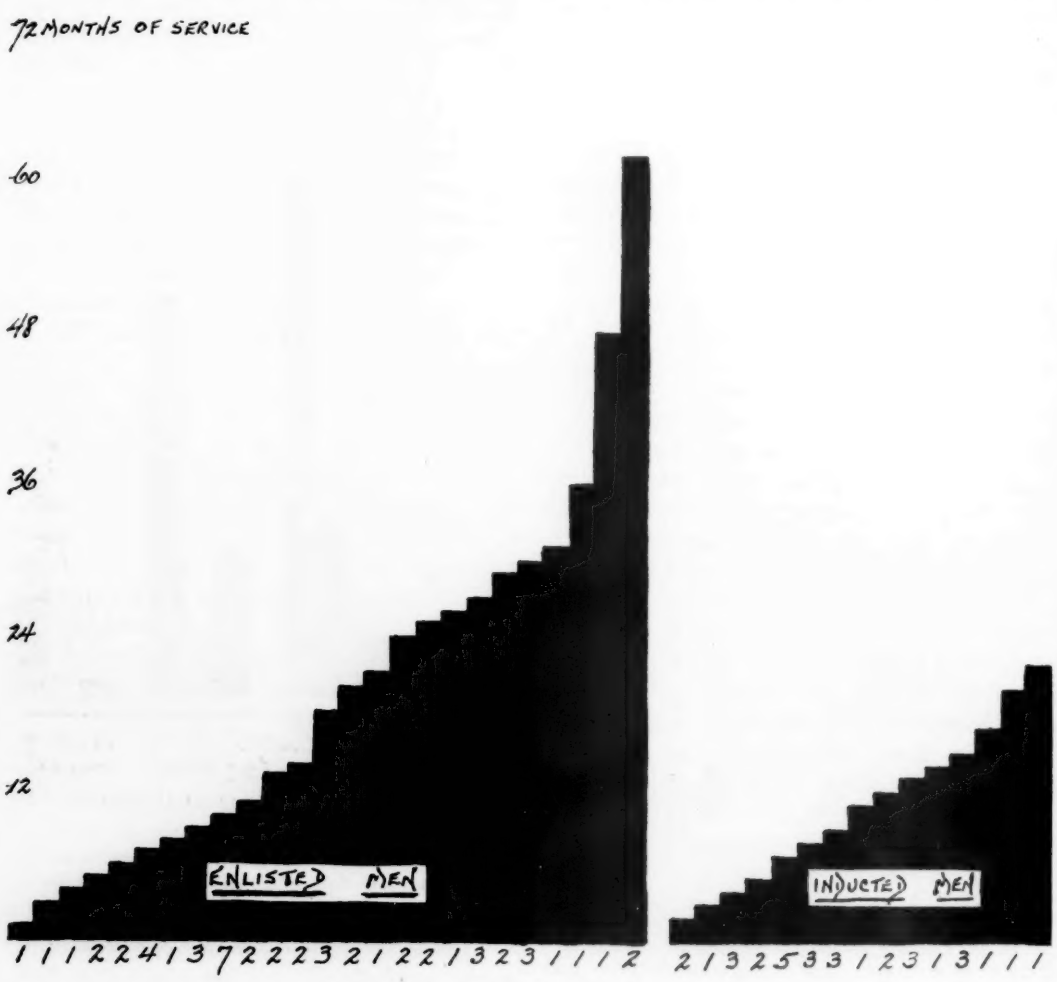


FIG. 3.—Length of service.

The length of service is variable from 1 month to 7 years, 7 months. Of the 89 whose service records were available 64.1 per cent were found to have enlisted and 35.9 per cent were inducted. The numbers and length of service respectively of enlisted and inducted men are shown in Fig. 3.

It is found that of those having psychoses, 28 per cent were diagnosed schizophrenia (6 per cent were of the simple type, 7 per cent catatonic, 9 per cent paranoid, 5 per cent hebephrenic, and 1 per cent mixed type). The manic-depressive group accounted for 2 per cent of the cases (one depressed type and one mixed type). Two cases were diagnosed as psychosis, type undetermined. One of these patients was A.W.O.L. from camp, had been drinking excessively, was picked up by M.P. and brought to our facility and transferred to an Army hospital. The impression of this case was that of either a mental deficient or a schizoid personality. The other veteran attempted suicide by eating lye and was treated in hospital. The impression was that of a manic-depressive psychosis, depressed type, or of a mental defective. One case was diagnosed psychosis

with psychopathic personality; one, psychosis due to trauma, and one, psychosis with mental deficiency.

Of the cases without psychosis, one was diagnosed mental deficiency, moron; this veteran was hospitalized in a mental institution for five years prior to induction. When inducted he was on parole. He stated that his family did not want him to tell the doctor he had been in a mental institution when he was examined for service, that they thought his going into the Army would make a man of him. He was discharged from service with a diagnosis of dementia præcox. (At one time while in service was diagnosed manic-depressive, made an attempt at suicide by hanging and was discharged to the same mental institution from which he was previously paroled.) An NP. board examination was made with a diagnosis of mental deficiency, psychopathic moron, the veteran having finished the fifth grade at 16 years.

Diagnoses listed as other conditions were 9 per cent of those examined. The diagnoses were Parkinson's syndrome; residuals of cerebro-spinal meningitis with emotional instability; fibroblastoma perineural multiple; atrophy of left leg, etiology undetermined; residuals of tumor of brain (cystic astrocytoma) with optic atrophy; residuals of cerebral accident, etiology undetermined, hemiplegia right; polyglandular deficiency; and disseminated sclerosis.

A diagnosis of no NP. condition found, was made in 18 per cent of those examined.

In this group NP. consultation was requested in order to evaluate a claim that had been filed. There was one veteran, a premedical student discharged because of tuberculosis, another because of arterial hypertension; one complained of severe pain that was unbearable (acute arthritis of a knee). He was treated with salicylates and on high vitamin diet and was discharged recovered.

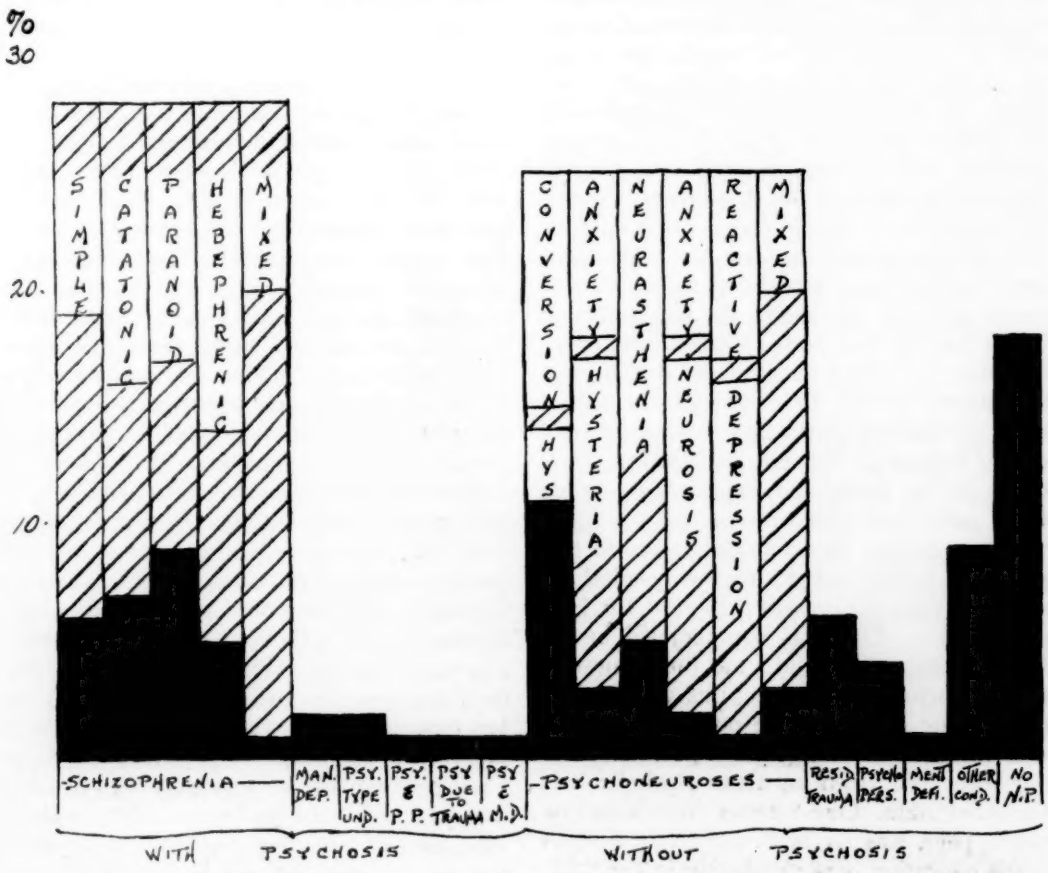


FIG. 4.

One veteran was discharged from service with a diagnosis of chronic myocarditis, having a history of tonsillectomy while in service and being operated seven times for miner's knee as well as having an incision and drainage for an abscess of the right arm prior to service; the impression in this case was that of a mental defective moron without psychosis, he having had a fourth grade education. One veteran had been discharged with a diagnosis of chronic rheumatoid arthritis (history of rheumatism at age of 8 years), gonorrhea in service with treatment, as well as a tonsillectomy following an acute attack of tonsillitis while in service. Another veteran was referred with request for examination for "all disabilities, for rating purposes." No history was available. The patient complained of low back pain since falling down a flight of cellar steps at home while on furlough. He was admitted to the facility for study; slipped intervertebral disc was ruled out and the patient was discharged. Prior to discharge he told a story of bending down and getting up suddenly, forgetting himself, of having a click occur in his back, and experiencing relief from pain from that time on.

Four veterans on active duty were in this group, 3 being brought to the hospital on order of their C.O., with a request for NP. examination. One was apprehended in the P.R.R. station by the M.P. at the request of the conductor of the train; this veteran had been acting queerly while on the train. He was transferred to an Army hospital, having recovered from an acute alcoholic hallucinated state. One veteran complained of vague pain, was on M.P. duty, had a sixth grade education, was previously in the artillery before being transferred to M.P. duty. He was dissatisfied by the inactivity of his assignment; was returned to his C.O. with the suggestion that he be given more arduous duties. Another veteran on active duty was of slight stature; he stated that he was bullied by others, that he was not afraid but could not see to fight without his glasses. This statement was corroborated by his sergeant who accompanied him; he was a high school graduate, a railroad telegraph operator prior to service. With his slight stature, heavy glasses and large floppy ears that stuck straight out from his head, it was readily seen how he might be bullied. He was returned to his C.O., the sergeant stating that he would take care of the bullies. The fourth veteran on active duty, was brought from jail charged with assault. In a drunken brawl he had drawn a knife on another soldier. He was returned to his C.O., with the recommendation that he stand trial and if found guilty, that he be punished.

Seven veterans in this group were discharged from the Navy. One was discharged by Medical Survey Board with a diagnosis of psychoneurosis; no Naval records were available. This veteran graduated from high school, had gonorrhea in service with treatment, stated he wanted to get out of the Navy, that he got information from corpsmen of the Medical Corps, "stuff that he should tell the doctor," claimed he was homesick at the time. An NP. Board was held; diagnosis deferred. One veteran was discharged with a diagnosis of rheumatic heart disease, the etiology being rheumatic fever while in service. Another had been operated while in service for appendicitis and developed a pulmonary embolus postoperatively. He had attempted suicide by drinking iodine while depressed because of his physical condition and many operations. At Naval Hospital, Bethesda, Md., he was mildly depressed, restless, anxious, and fearful but displayed no pronounced psychotic manifestations. He was thought to be constitutionally psychopathic. He was discharged from the Navy, psychoneurosis unclassified. When last examined there were insufficient findings had for a diagnosis of psychoneurosis, he having stated that he was working regularly in a tube mill since discharge. Allergic study was advised for this patient, as he complained of breaking out in lumps all over his body at nights and stated that he felt that adrenalin takes the lumps away. One veteran had been reported as a paranoid; he was found to have an eighth grade education. Naval records indicated drinking excessively for two years prior to discharge, also syphilis and chancroids with negative spinal fluid and serology. He worked as an electrician and mill-wright making $90.00 semi-monthly, and admitted drinking on pay days. Patient was not found psychotic; the history indicated chronic alcoholism.

A Medical Survey Board discharged another veteran with a diagnosis of psychoneurosis, anxiety neurosis; the patient had a

seventh grade education, worked as a filer prior to service and returned to his old job on discharge, making $80.00 a week. States he was drunk every week-end, and was always shaky Monday when he went to work, from drinking and lack of sleep. No NP. condition was found, impression being that he too was a chronic alcoholic. One veteran was discharged with a recorded diagnosis of psychoneurosis, neurasthenia. He had graduated from high school, was operated for appendicitis while in service, finally discharged, the Medical Survey Board stating diagnosis of hypertension, arterial and duodenal ulcer with obstruction. Findings did not warrant an NP. diagnosis when examined.

One veteran of this group, a bread salesman prior to and after service, having 2 years high school education, admitting drinking whiskey and beer at times, with no Naval records available, gave insufficient findings to warrant an NP. diagnosis. The last veteran of this group was discharged from service with the statement in photostatic records, "For purposes of administration this man is diagnosed psychoneurosis, anxiety state, mild." The veteran had a sixth grade education, a mental age of 10 years; findings were insufficient for an NP. diagnosis. The board stated that patient was a malingerer.

None of the patients examined had positive serology or positive spinal fluid findings, one admitted chancre. Six patients admitted having gonorrhea; one stated that he had the infection at the age of 3 months, another that he had the infection twice. All were treated.

The rehabilitation of this large group of veterans is a gigantic problem. The American Legion at its 24th National Convention, recognizing this problem, made certain recommendations—providing for the establishment of a United States Employment Service. Resolution No. 308 of this body "recommends that all hiring of labor be made through the United States Employment Service."

The Veterans Administration has been charged with the additional responsibility under Public Law 16, Part VII, 78th Congress whereby any person honorably discharged from active military or naval service at any time after December 6, 1941, and prior to the termination of the present war, who has a disability incurred in or aggravated by such service for which pension is payable and who is in need of vocational rehabilitation to overcome the handicap of such disability shall be entitled to such vocational rehabilitation as may be prescribed by the Veterans Administration. No course of training in excess of four years shall be approved, nor shall any training be afforded beyond six years after the termination of the present war. This Act was approved March 24, 1943.

It is suggested that veterans for whom such training is approved should be given such examination and tests as would determine their mental ability to conclude such training successfully. The expense involved in such a procedure would save much unnecessary expense and labor, later. In this field occupational therapy is a golden opportunity, especially for those who are mentally ill.

SUMMARY

1. The precipitating factor in 99 per cent of these cases cannot be said to be due to any excessive stress or strain as found in actual combat.

2. No one outstanding or abnormal factor is found in family or personal histories.

3. It is believed that in some cases, perhaps in the psychoneurotic group primarily, the sudden change of environment together with an inadequate personality to begin with, may have contributed as a precipitating factor in the patient's mental breakdown.

4. Venereal disease in this study did not play an important rôle.

5. It is my opinion that a great number of cases found in this study could have been rejected prior to induction had proper notation been made as to educational advantages. Those found to have less than an eighth grade education could have been segregated by draft boards, proper psychometric examinations could have been given and social service histories obtained.

BIBLIOGRAPHY

1. Summary of Proceedings, 24th Annual National Convention of the American Legion, Kansas City, Missouri, September 19-21, 1942, p. 72.

2. Public Law 16, 78th Congress, Chapter 22, 1st Session, Part VII, approved 3/24/43.

RATIO OF VOLUNTARY ENLISTMENT TO INDUCTION IN THE VARIOUS TYPES OF NEUROPSYCHIATRIC DISORDERS[1]

CAPTAIN FREDERICK LEMERE, M.C., U.S.A., AND CAPTAIN EDWARD D. GREENWOOD, M.C., U.S.A.
Camp Carson, Colorado

In bringing patients before an army sanity board, we were impressed by the large number of psychotic patients who had voluntarily enlisted for service. It was thought that a comparison of enlistment to induction in the various neuropsychiatric classifications might be of value to induction boards as well as of general interest.

RESULTS

Out of 9217 patients admitted to the Station Hospital at Camp Carson during a seven months period, 669 were diagnosed as having a neuropsychiatric disorder.

The following table shows the percentage of enlisted as compared to inducted men in the various neuropsychiatric classifications. Two hundred cases of nasopharyngitis from the same organizations as the neuropsychiatric patients were included as normal controls.

TABLE COMPARING VOLUNTARY ENLISTMENT TO INDUCTION IN 200 NORMAL CONTROLS AND IN THE VARIOUS NEUROPSYCHIATRIC DISORDERS

Diagnosis	Percentage of patients who voluntarily enlisted
I. Nasopharyngitis controls (200 patients)	18
II. Epilepsy (36 patients)	25
III. Psychoneuroses	
1. Neurasthenia gastrica (gastric symptoms predominate—185 patients)	23
2. Neurocirculatory asthenia (cardiac and circulatory symptoms predominate—92 patients)	11
3. Other types (hysteria, hypochondriasis, psychasthenia—132 patients)	13
IV. Alcoholism	
1. Acute (74 patients)	23
2. Chronic (17 patients)	30
V. Dementia præcox (41 patients)	36
VI. Mental deficiency (33 patients)	5
VII. Constitutional psychopathic states (sexual psychopaths, criminals, emotionally unstable, misfits, and inadequates—63 patients)	9
VIII. Psychoses other than dementia præcox—insufficient number	

DISCUSSION

From the above table it is apparent that certain neuropsychiatric patients seek army service while others avoid it. The reasons for this are of practical importance to the induction board examiner as well as of general interest from the standpoint of psychosomatic medicine.

Epileptic patients volunteered more often than the average soldier because of the well known epileptic characteristics of religiosity, over-conscientiousness and devotion to an ideal. This is probably an attempt to compensate for their tragic illness. Many concealed their illness from the examining doctor in the unrealistic hope that in some way they could avoid subsequent detection. Most of them were bitterly disappointed when informed that they would have to be discharged from the army.

Patients with psychoneurosis manifested by gastrointestinal symptoms (neurasthenia gastrica) likewise volunteered more often than usual because of a deep sense of obligation to their country and to themselves to "do the right thing." This is in keeping with the psychosomatic observation that the overconscientious, rigid, compulsive type of neurotic is especially prone to gastrointestinal complaints. These patients had often concealed their digestive weakness from the army examiners against their own better judgment. They were at once relieved and at the same time ashamed of their weakness when informed that they were going to be discharged. It is important to reassure these patients at this point if one is to prevent trauma to their ego which might seriously jeopardize their future adjustment.

[1] From the Neuropsychiatric Service of the Station Hospital, Camp Carson, Colorado.

Other types of psychoneurotic patients, on the other hand, seldom volunteered for service. They seemed to recognize their deficiencies and instinctively avoided the stress and strain of army life. They rarely concealed their illness from the examining doctors who apparently were inclined to pass over symptoms which did not conform to a disease pattern and were not supported by positive physical findings. These patients welcomed a discharge and immediately improved when they were informed that they would be discharged.

Patients with alcoholism volunteered with the hope that the army would provide shelter and protection and perhaps excitement as a substitute for the escape they were seeking in drink. Family physicians and parents were often a deciding factor, having urged the patient to join the army and "make a man of himself." Alcoholic patients usually accepted their discharge without enthusiasm often asking for "another chance" to stay in the army. When enlisting they were apt to conceal their drinking from the examining doctor.

The highest enlistment rate of all occurred in patients with dementia præcox, with about one patient in three having volunteered. Most of the patients who volunteered did so with the false hope that they could adjust to army life when they had failed to do so in civilian life. Patients and relatives had the erroneous idea that the army offers refuge to the misfit and makes men out of inadequate personalities. A surprising number had informed the induction examiner of previous institutionalization only to have this disregarded. Patients with dementia præcox usually resented being discharged and asked to go back to duty, in spite of repeated explanations that this was impossible.

Patients with mental deficiency rarely volunteered for service, probably because of a lack of initiative.

Constitutional psychopaths (pathologic liars, gamblers, criminals, sex offenders and inadequates) very seldom volunteered. This is in keeping with the lack of sense of responsibility, patriotism and social obligation so characteristic of this state. They accepted discharge (without honor) without any show of regret or shame. Many of these patients had been inducted in spite of a history of repeated asocial acts and previous arrests by civilian authorities. Army life does not reform these "bad actors" and they should never be inducted, as they are only a constant source of trouble and a bad influence on the other men.

SUMMARY

1. Neuropsychiatric patients suffering from alcoholism, epilepsy, neurasthenia gastrica, and especially dementia præcox, have a greater than normal tendency to voluntarily enlist in the army rather than wait for induction.

2. Neuropsychiatric patients suffering from mental deficiency, psychoneurosis (exclusive of neurasthenia gastrica), and especially constitutional psychopathic states have a greater than normal tendency to avoid army service.

CONCLUSIONS

1. The public should be educated to the fact that army life offers no solution for the problems of the neuropsychiatrically unfit or maladjusted.

2. Medical examiners for local and induction boards should watch for alcoholism, neurasthenia gastrica, epilepsy and especially dementia præcox in those who are overanxious to enlist in the army.

3. Mental deficiency, psychoneuroses and constitutional psychopathic states should be watched for by induction boards in those men who especially try to avoid army service.

4. Local and induction board examiners should inquire into any history of previous care in a mental institution, repeated asocial behavior with arrest by civil authorities, or past nervous breakdowns. If found and substantiated this should be a cause for rejection of the inductee.

PSYCHIATRIC CASUALTIES AMONG DEFENSE WORKERS [1]

MILTON ROSENBAUM, M. D., AND JOHN ROMANO, M. D., CINCINNATI, OHIO

The working efficiency of the defense worker is as important to the successful prosecution of the war as the fighting efficiency of the soldier or sailor. Impaired efficiency in industry may be caused, provoked or modified by physical illness. The researches and long range plans of industrial medicine, particularly as they have been developed in the larger industries have been of inestimable and permanent value. These have included the establishment of educational programs concerning safety methods and devices, maintenance of first aid and medical clinics in the factories, recognition and control of the variables of heat, light, ventilation, nutrition and fatigue.

For the most part such efforts have been directed towards safety and the physical health of the worker. Emotional factors however may act to cause, provoke or modify behavior so as to impair efficiency. This is not always recognized by the industrial physician.[2] The emotional distress may be expressed in the form of impersonal or somatic symptoms, such as fatigue, listlessness or epigastric distress; in personal or psychologic symptoms such as a phobia or hysterical behavior; in interpersonal symptoms such as feelings of discrimination or depreciation toward his fellow employees or employers.

From the industrial point of view, such expressions of emotional distress are important in terms of inferior output, high sickness rate, high labor turnover, and increased absenteeism.

Perhaps the emotional health of the worker before the war was less important than it is now. Perhaps the factors of more careful selection and easier replacement of employees and the less intense production schedules contributed to this. Whatever the causes, recognition of emotional factors as determinants of impaired efficiency is of great importance today. This does not mean that awareness and intelligent treatment of these emotional factors are going to solve the matter of industrial absenteeism. This is a many faceted problem with cultural, racial, economic, emotional and physical factors which run the gamut from housing and transportation to fatigue and ennui. Certain contributions have been made in industry by the introduction of psychologic personality inventories, psychometric and aptitude tests. Even more important has been the introduction of methods to establish morale through identification with the industry on non-paternalistic grounds.

However, we believe there are many areas in industry particularly in interviewing and counseling which will benefit, not from intellectual and aptitude tests alone, but from an understanding of the basic emotional factors of interpersonal relationships.

During the past year we have seen many defense workers presenting psychiatric problems which seemed to be provoked or at least modified by certain stresses encountered in their work. The interest stimulated by the study of these patients led us to establish a mutually informative relationship with one of the large defense plants in the Cincinnati area. The timely signifiance of these data motivated us to present a brief summary of some of our experiences. But most important, we believe, is to stimulate an attitude of awareness on the part of the general practitioner and the industrial physician so that they may be better able to recognize and treat intelligently the impaired efficiency of the worker when it is caused or provoked by emotional factors. The clinical fact exists

---

[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association, Detroit, Michigan, May 10-13, 1943.

From the Department of Psychiatry, University of Cincinnati College of Medicine and the Cincinnati General Hospital, Cincinnati, Ohio.

[2] At a recent medical symposium on the subject of industrial medicine psychiatric disorders were mentioned only once, and this was a reference to the rare cases of organic mental disturbances with exposure to carbon disulphide. Interestingly enough, the only reference to personal factors in relation to the health of the workers was made by a non-medical member of the symposium who pointed out that if the complaining worker is given a chance to talk freely the source of the difficulty might be found to lie in problems based on interpersonal relationships in or outside the plant.

that emotional distress may not reveal itself directly in psychologic symptoms, but may run the gamut from absenteeism to occupational tics.

Qualitatively, we found nothing new nor specific in the types of patients we observed. Further, the clinical instances to be cited will illustrate certain general principles related to psychiatric problems in defense workers and will by no means include all of the contributing factors or cover the entire field.

CASE 1.—The patient, a 46-year-old married white man, had suffered from a severe anxiety state with depressive features for the past 6 months. He complained of palpitation and precordial pain with fear of death, insomnia, poor appetite with occasional gastric discomfort, increased tension mounting at times to agitation, difficulty in concentration and a general feeling of hopelessness about his condition.

He had held many jobs as a printer and was constantly in trouble with his boss or foreman and as a result quit several jobs. For the past 3 years he worked in a local printing plant, started on a night shift but was able to rotate weekly on a day and night shift until about a year ago. Since then he has worked continually on the night shift because the man with whom he had formerly rotated refused to continue with the night shift by reason of his seniority. The patient bitterly resented his fellow worker's attitude, was unable to effect a change in his shift and in this setting developed his illness.

Pertinent Background Material.—The patient was the youngest of 3 brothers. The father died of alcoholic cirrhosis when the patient was 6 years old and was described as a mean, tough and nasty person. The brothers were also tough and aggressive, bullied the patient and were constantly fighting each other to the intense fear of the patient who usually would run and hide from these violent scenes. The patient, a rather small man, always feared and resented his brothers and it was quite obvious that the conflict with the father and the brothers was carried over in his everyday life with bosses, foreman, and at the present time with a "brother" worker.

Course.—The patient was seen on two occasions, and the conflict with his brothers with its displacement to his fellow worker was pointed out and discussed. He was urged to see the superintendent and arrange for a change in schedule and was reassured that the doctor would back him up in this request. With this brief therapy the patient was able to effect a change in his work schedule with concomitant improvement in his symptoms and has made a good work and medical adjustment since.

CASE 2.—The patient, a 35-year-old divorced white man, complained of insomnia and fatigue. He had been working in a defense plant for the past year and until 2 months ago worked on the second shift (4:00 p. m. to 12:00 midnight). Since then he has been on the night shift (12:00 to 7:00 a. m.). While on this shift his clinical symptoms started. In addition there has been an exacerbation of a chronic gastric ulcer.

In telling his story the patient emphasized the fact that he took the night shift to get away from his foreman whom he disliked intensely. He was told this foreman would not be placed on the night shift but within a few days after the change the hated and feared foreman was nevertheless placed on the same shift. The patient himself said that "maybe my sleep difficulty may be an unconscious attempt to get off the night shift."

These two cases represent emotional reactions to a rather common conflict situation with intense hostility directed towards a father or brother figure, usually one who has authority or seniority over the patient. The inability to handle properly the intense hostility may result in various types of psychiatric disorders and in the cases cited resulted in neurotic and psychosomatic symptoms. The first case well illustrates the original source of the displaced hostility and the therapeutic relief obtained by the patient gaining some degree of emotional insight. Another important finding was that the symptoms were not due to the night work itself regardless of how difficult it might have been but rather to disturbances in interpersonal relationships which it called into play.

CASE 3.—The patient, a 24-year-old married white man, developed marked anxiety symptoms and paranoid ideas concerning his fellow workers (with exacerbation of a duodenal ulcer) shortly after working in a defense plant. He improved after a brief hospital stay.

Present Illness.—About 2 months before admission the patient started to work at a local defense plant. The first 6 weeks were spent in a training course and then he was put on regular work on a speed lathe at the main plant. Shortly after this he began to complain of the men not liking him and that the company didn't want him as they moved him from job to job. The paranoid ideas continued, he became progressively more anxious and upset and ate and slept poorly. Eight days before admission he returned home crying and sobbing and told his wife the men were chasing and annoying him. He also complained of his stomach ulcers and finally his refusal to work led to his hospitalization.

Pertinent Background Material.—The patient was the youngest of 8 children, the next older brother being an alcoholic who suffered from stomach ulcers and had been hospitalized twice for "nervous breakdowns." The patient's athletic and play activities were limited during childhood because of a congenital dislocation of the patella. He started to work after finishing high school and held numerous jobs, usually quitting in order to better himself. He

had a perfectionistic and conscientious attitude toward his work.

He complained of "stomach trouble" off and on all his life but at the age of 16 a definite diagnosis of duodenal ulcer was made, and he has had periodic medical treatment. During his present hospital stay there was X-ray evidence of an active duodenal ulcer.

He was a quiet, reserved and rather sensitive person of a passive type. He claimed to have been happily married for the past 3½ years but he was obviously sexually maladjusted with little sex desire. Because of his diminished heterosexual drive his wife at times felt he was spending his sexual energy in extra-marital relationships.

Course.—After a few days the psychotic and ulcer symptoms subsided, and he was discharged as improved in 13 days. He remained home for 2 weeks and then returned to work, being placed on a day shift and was followed in the psychiatric clinic.

Formulation.—The patient was essentially a passive, dependent (homosexual) type with a strong need to gain recognition and achievement in his work. The highly competitive situation in which he found himself at the defense plant plus the delay and resulting frustration in not being able to gain immediate recognition and achievement in his work (he had been shifted from job to job because of lack of skill) increased his hostility to the point at which he projected the hostility to his fellow workers.

It may well be that the presence of a duodenal ulcer protected him from a more serious and protracted paranoid state by allowing him to regress with a somatic and therefore more socially acceptable mechanism.

CASE 4.—The patient, a 24-year-old married white man, was admitted to the hospital in a state of intense anxiety verging on panic.

Present Illness.—After 6 weeks training at a local defense plant the patient was placed in charge of a large machine. On this job he became quite tense, with anger directed against a fellow worker who took great delight in continually banging the patient's machine. As his efficiency decreased he was transferred to a less important job, felt inferior, began to fear the other men, became irritable with his wife and struck her several times and began to drink heavily. His tenseness, fears and anxiety so increased that he was hospitalized.

Pertinent Background Material.—The patient, an intelligent high school graduate, had many neurotic traits as a child and was always considered "high strung." The father died when the patient was 4, and the mother married three times. There were 2 older half-brothers, and the one next to him he feared and hated. Three years ago he married shortly after inheriting $9000 from his father. He states that he is happily married and active sexually. Since his marriage the patient was slightly nervous and says his main problem was that at times for no apparent reason he would become intensely angry at men, and the associated murderous impulses frightened him.

Course.—He improved rapidly and returned to work on a day shift. The main conflict was centered around his brother, and the older men at the plant were identified with the brother. The hostility engendered was too great to be handled and resulted in projection with a resulting panic state.

Highly competitive masculine situations notoriously produce intense anxiety in passive, dependent (homosexual) men. The above two patients' acute psychotic (paranoid) episodes resulted when they were exposed to just such a life situation. The severity of the reaction no doubt indicates pre-existing psychological abnormalities or a poorly integrated ego. One might wonder why previous competitive work situations didn't produce a break-down. The ease with which a person can change or quit jobs during ordinary times is blocked by the exigencies of war times. Thus, if a conflict over work does occur the choice of outlets or solutions is limited and the resulting frustrations greater. Therefore, it is obvious that an overwhelmed ego which is poorly integrated and equipped to start with will "crack" more completely and more severely when exposed to intense frustrations. This is quite similar to certain psychiatric casualties during military service.

CASE 5.—A 30-year-old single white man had suffered from an anxiety neurosis with probias for the past 8 years. A year after the onset of his illness he recovered to the point where he made a good work adjustment but the persistent phobias completely blocked his social and sexual life. After working in a defense plant for 8 months the neurosis was provoked into its original severity and he had to quit his job.

Present Illness.—Eight years ago the patient developed a severe anxiety neurosis with many phobias (unable to ride a streetcar, go to a movie, etc.) and other vague fears. The illness occurred in the following setting. He broke off with a girl with whom he had been going steadily for 3 years because her father violently objected to him on religious grounds, and his mother used all her power to keep him attached to and dependent on her and was quite successful in her attempts. Since the onset of his illness he has avoided girls completely. With psychiatric help he improved and within a year returned to work and adjusted well in that area of his life. About 1½ years ago he started to work in a defense plant but after getting along quite well his symptoms returned in all their previous severity, being characterized by marked anxiety, phobias and occasional ideas that people were looking at him.

The exacerbation of his illness coincided with the arrival of women workers in his department. In one respect his entire illness was to protect him

from contacts with women, and he suddenly found himself in a situation where he was not only thrown into close contact with women but was also urged by his fellow workers to adopt a more masculine attitude towards them. Because of his obvious uneasiness in the presence of women he soon became the butt of jokes regarding his heterosexual shortcomings.

Pertinent Past History.—He was the youngest of 3 boys. The father was a chronic alcoholic who died of delirium tremens when the patient was 15. The mother vigorously discouraged any interest in girls and at a very early age plunged him into a serious conflict with both herself and the father by constantly depreciating the father and at the same time being very possessive and seductive towards him. He was exposed to constant parental quarreling and fighting and on many an occasion was directly threatened by his intoxicated father. These traumas plus exposure to a bullying older brother produced marked anxiety from which he took refuge by an almost complete inhibition of heterosexual drives, a passive attitude towards men, and regressed to a dependent attitude towards his mother.

Course.—The patient improved gradually with weekly psychotherapeutic sessions, lost most of his 8-year-old phobias, and after 7 months returned to work.

Formulation.—This patient had lifelong sexual conflicts which led to a long standing anxiety hysteria. The neurosis itself then became a defense against further heterosexual stimulation with its resulting anxieties. The arrival of women workers in his department, many of whom were seductive, plus the humiliation he suffered at the hands of the "hardboiled" men was almost a repetition of the original infantile situation and intensified the anxieties to the point of a recrudescence of the neurosis. Another factor was that the patient, an extremely efficient worker, rapidly advanced in pay, and the onset of the neurosis also coincided with an increase in salary which placed him above most of the other men.

This patient is an extreme example of the disastrous results which may occur in men with rather severe sexual conflicts when thrown into a situation which brings them into direct contact with disturbing temptation situations. These patients may make a satisfactory work adjustment despite their neurosis as long as the general environment of the work fits in with their established defenses. Obviously the ideal approach to such cases is individual psychotherapy but in most cases this may not be feasible or available. Therefore, it might be well to attempt to learn in the original job interview whether such obvious sexual maladjustments exist and if so an attempt should be made to place the worker in the least conflict provoking position.

Another point well illustrated by this patient is the anxiety which can be created in certain men by too rapid promotion.

CASE 6.—A 36-year-old married white woman developed ideas that her fellow men workers in the defense plant were jealous of her. These ideas occurred in a setting in which she was the only woman worker among a group of men. She rapidly became excited and catatonic. She improved after a course of insulin shock treatment.

Present Illness.—She had been treated over a period of several years for chronic brucellosis and had been hospitalized for this condition about 6 months ago. Due to debts incurred by her chronic illness she got a job in a defense plant about 3 months before admission. After a training period of 6 weeks she was sent to the main plant where she ran a machine, being the only woman in the department. She was an extremely skillful worker, ran her machine with a minimum of waste and turned out more pieces than her fellow workers. However, during this time she was suspicious of the men, felt they didn't like her and were trying to get rid of her. In all probability the men workers were jealous. After eating a cup cake which one of the men offered to her she was sure it was poisoned and suddenly became very disturbed, excited and hallucinated actively and in this condition entered the hospital.

Pertinent Past History.—The patient was the fourth of 6 children and was raised by a strict aunt with a resulting unhappy childhood. Very early in childhood the mother was removed to a mental hospital where she remained until her death, and no one in the family ever mentioned the mother. As a child she was a "tom-boy" but very well behaved. She did very fine work in school and in addition took an active part in competitive athletics in which she was proficient. After finishing college the patient taught school until her marriage 12 years ago. Her husband was 7 years younger than she, a very passive and dependent type who was never successful in a financial way and for the past several years has worked in a small book shop, drawing a meager salary. In the first 2 years of her marriage the patient underwent two abortions and rationalized this on the grounds of a difficult economic situation. At present she has a son, age 6, who seems to be a healthy normal child. With the onset of the brucellosis her sexual drive diminished and during the past year there have been practically no sexual relations. Although she had many friends she seemed "cold" and aloof albeit a very conscientious dependable person with high ambitions and ideals. She realized her husband had no "get up" and regarded him as her inferior.

Course.—Her clinical course was quite stormy and quite characteristic of a catatonic excitement. The intense hostility to her husband was expressed clearly and directly, and there were marked fears that her food was being poisoned. Much guilt over the two abortions was also expressed. She was given a course of insulin "shocks" and in 2 months was discharged as markedly improved. Since discharge she has remained at home doing general housework, has shown practically no insight into her illness with a general flattening of affect.

Formulation.—This woman always revealed strong masculine traits and in her marriage to a weak dependent younger man was able to act out many of her repressed impulses. When placed in a

situation at the defense plant in which she played not only a masculine rôle but even outdid the men at their own game she quickly sensed their jealousy. The increase in her own hostility towards the men with resulting guilt and retaliative fears proved too much for an already weakened ego (chronic infection, financial worries) and she started to project and then quickly went into a catatonic excitement.

Many new problems will be added to industry as a whole as a result of the increasing number of women entering industry. Many of the psychiatric problems affecting the woman worker are no different from those of the men, but there are some problems which are more or less specific for the woman. The instance just presented is an extreme example of a severe psychotic disturbance brought on, in part at least, by a conflict which is peculiar to female psychology. The patient represents those women who have strong masculine identification with a denial of their femininity, are highly competitive with men and, therefore, develop a so-called "masculine protest" with a good deal of repressed hostility. Such women, of course, may become excellent workers, but there is always a danger that if they are thrown into close competitive contact with men the men easily and quickly sense their unconscious attitude. Such a state of affairs may create tensions and dissatisfactions in both parties which will tend to undermine the general efficiency of the working program.

If one listed all the factors which play a part in the emotional health and general efficiency of the worker, limiting these to the work environment alone, the list would be long and impressive. Probably the most important aspect of such a list would be that each factor may not only be an etiological agent in itself but may act as a substitute in the mind of the complaining worker, for another hidden factor. For example, noise might produce a tension state, but on the other hand the worker may complain that the noise is causing his difficulties, although the real disturbing agent is dislike of the foreman.

The problem of noise is more of a factor in women than men. Many will complain of noise in the beginning but usually adjust to it. If they continue to complain that the noise "gets on my nerves" or even cry about it one should suspect that they desire a change in position for some other reason.

The size of the plant has had an interesting effect on some workers. In huge plants some of the new workers seem overwhelmed by the tremendous size. They feel insignificant, insecure, as if they fear losing their personal identity. A few workers actually get lost and improve when placed in more easily reached and more familiar surroundings. This may be a special problem with the timid, the handicapped, the aged, and those with limited intellectual endowment.

Other problems which the plant physician frequently encounters are sleeping difficulties in those on the night shift, various reactions arising because of racial discrimination, and those resulting from the close contact of the sexes. Many women utilize, capitalize and exploit their femininity in that although they are supposed to do a man's job they expect more favors and privileges because they are women. This is commonly referred to as "gold-bricking."

Finally a word might be said on the subject of patriotic feeling as it applies to the defense worker. There is certainly no uniform reaction as yet to the sacrifices one will make because of patriotism alone. Naturally this applies to the country at large. Many plants have attempted to encourage and develop this feeling in the employees by taking positive steps which will allow each worker to identify himself with the plant as a whole and make him feel that his job, no matter how trivial it may be, is as important as the final product itself. The past and present difficulties inherent in general economic, social and political forces play their part here. As a rule the patriotic feeling is a more important positive force in the worker with sons and relatives in the armed forces and in those with actual knowledge of what went on in the first war. In a recent psychiatric consultation with a young man who was diagnosed as a psychopathic personality it was noted that he was frequently absent from the defense plant where he had been employed for about a year. He stated that he took the defense job against his own will as he was forced to give up an easy WPA job. When questioned about his patriotic feeling he laughed aloud, exclaiming, "What

did this country ever do for me?" and immediately told of the hardships and sufferings he endured in the past. Obviously this is an extreme example, but it may well be that similar but more disguised sentiments, create difficulties in industry in those who are not psychopaths.

William Green on a recent March of Time program spoke of 100 causes of absenteeism. We are aware of the many aspects of the problem as it relates to cultural, racial and economic factors. Nor do we wish to minimize the tremendous advances made by industrial medicine in the fields of physical health and of accident prevention. Our purpose in this paper is to draw the attention of the general practitioner and the industrial physician to the fact that emotional factors may be provocative of distress and that this distress may be expressed variously, from somatic symptoms to interpersonal friction.[3] The physician should be aware constantly of the personal and interpersonal aspects of behavior, of the background of the patient's emotional experiences, of what is sometimes called the "ego strength" or personality capacity of the person as well as he is aware of the various noxious factors, physical, chemical, etc., which may be present.

[3] In most instances, the emotional problems will not reach the magnitude of those outlined in this paper.

ENURESIS IN THE NAVY [1]

LIEUTENANT ALEXANDER LEVINE

Medical Corps, United States Naval Reserve

To those of us who have considered enuresis to be chiefly a problem of the preadolescent, it was a distinct revelation to find that a large number of recruits at the Norfolk Naval Training Station receiving discharges for psychiatric conditions were bed-wetters. This attains greater significance when it is realized that discharges because of psychiatric manifestations form the greater portion of medical discharges at this naval training station.

Enuresis is urinary incontinence, either diurnal or nocturnal or both, which persists beyond the age of 3 years. Because of the marked preponderance of this disqualifying defect it was decided to study a group of cases with a view to possible etiological factors. Therefore, 150 consecutive cases of recruits with enuresis were examined and their backgrounds carefully scrutinized. Wherever possible a detailed social history was obtained by social service field workers who interviewed members of the family, employers, friends, teachers and others who had some contact with the individual in question. All the recruits, included in this study were personally interviewed and were kept for some time under observation. The purpose of this paper is to give the results of this investigation.

First, as to the sources of our material. Most of the recruits enlisting in the United States Navy from the southern states were sent to the Norfolk Naval Training Station where they underwent their preliminary naval training. Many of them were in their late 'teens and all enlisted voluntarily. Negroes formed a small proportion of the personnel at this station and were enlisted in the mess attendant branch of the service. They were taught to wait on tables, to act as stewards, and also received indoctrination in military matters. The South contributed most of the colored recruits who were trained at this station. Prior to arrival at training stations all recruits undergo a preliminary medical examination and questionnaire which weeds out gross medical and psychiatric misfits.

In our series of cases of enuresis the ages ranged from 17 to 27 years, but the majority were under 20 years of age. It was found that approximately 24 per cent of all recruits receiving discharges for psychiatric conditions were bed-wetters and that the ratio of bed-wetters among all recruits at this station was 12 per 1,000. Enuresis was found to occur more than 8 times as often among the negro mess attendants as among the white recruits. This increased frequency among negroes does not agree with the finding of Davison(1) who studied enuresis in children and found it to be more common among whites than negroes.

Most of the recruits came from small rural communities where the chief occupations were farming or working in a sawmill or cotton mill. The majority had very little education and started their working careers at an early age. The usual history was that bed-wetting has been present as long as the recruit could remember, occurring several times weekly. As a rule the enuretic does not awaken during the act of voiding. In only a few cases was diurnal incontinence present; while in the majority the enuresis was nocturnal. Rarely was there an interval of more than a few months during which the recruit was entirely free of this manifestation. In many cases the frequency of enuresis was increased by some psychic or physical trauma, such as a head or back injury or an operative procedure. The recruit usually attributed the persistence of enuresis to this event and claimed that he had "kidney trouble."

It was interesting to find that in only a small percentage of these cases medical attention was sought. When this failed to produce the desired results after a few visits the bed-wetter usually stopped going to the doctor. Incidentally some unusual methods

[1] Approved for publication by the Navy Department.

of treatment were brought to light. In the case of a negro, the grandmother forced him to eat a fried rat as a method of cure. Another recruit dug up live ants in the back yard and ate them. Others stated that they used to sleep with a bulky object strapped to their backs in such a fashion that they had to sleep on their abdomen, in the belief that sleeping on the back was the cause of the bed-wetting. A few recruits used rubber bands or tied strings around the penis before retiring at night.

As was to be expected, it was found that enuresis is but a symptom of a more generalized disturbance. Associated with the enuresis were numerous other psychiatric manifestations, such as somnambulism, severe nail-biting, nightmares, frequent anxiety dreams, and "nervousness." These concomitant findings were evident in 83 per cent of the cases studied. (Table 1.) Occasionally, youths who are enuretic may appear to be fairly mature and emotionally stable with well integrated personalities, but further probing will often reveal deep-seated conflicts and maladjustments. It must be understood that enuresis *per se* is not incapacitating in that it does not interfere with the work or social adjustment of the individual.

TABLE 1

FINDINGS IN 150 CASES OF ENURESIS

Symptom	Per cent
Psychiatric abnormalities	83
Nail-biting	42
Among white recruits	56
Among colored recruits	30
Nightmares and frequent anxiety dreams	48
Neurotic traits	53
Vasomotor instability	42

Severe nail-biting was present in 42 per cent of the bed-wetters. The frequency of this symptom has been stressed by other investigators. Bickford(2) found 7 out of 26 bed-wetters to be subject to nail-biting, and Anderson(3) found nail-biting in 41 per cent of boys and 68 per cent of girls who were enuretic. The latter writer felt that the nail-biting, which is so often present in the bed-wetter, was an outlet for emotional energy arising from maladjustment. Nail-biting was found much more frequently among the white recruits, 56 per cent as compared with 30 per cent among the negroes.

The history of nightmares and frequent anxiety dreams was elicited in 48 per cent of the cases. These recruits dreamed of falling and never landing, being chased, fighting ferocious animals and against overwhelming odds. An attempt was made to correlate dreams with bed-wetting episodes. However, most of the recruits denied the relationship although a few stated that they sometimes dreamed that they were voiding and awoke the following morning to find the bed wet.

Upon questioning, many of the men stated that they were nervous. This nervousness was described by them as frequent headaches, inability to withstand excitement, a tendency to get upset easily, intolerance of loud noises, sleepwalking, fear of crowds, or a feeling of tremulousness and inward tension. These findings were present in 53 per cent of the recruits studied.

The enuretic recruits often appeared to be immature and emotionally unstable. This emotional immaturity was frequently manifested by poor adjustment upon arrival at the training station. They were more prone to nostalgia and marked feelings of inferiority. Many of them had numerous somatic complaints such as headaches, dizzy spells, blurring of vision and backaches, for which no organic basis could be found. This tendency was more common in the colored recruits.

Vasomotor instability as manifested by mottling, coldness, clamminess and excessive perspiration of the extremities is frequently a sign of internal conflict and tension. This was found in varying degrees in 42 per cent of our cases. It was usually associated with the subjective feelings of tremulousness and nervousness.

A study of the family constellation revealed some interesting data (Table 2). In 29 per cent of the cases there was a broken home, due to death of parents, divorce, separation or illegitimacy. The frequency of home disruption has been stressed by other investigators such as Stockwell and Smith(4) who found it in 20 cases out of 100 enuretics examined, and by Browne

and Ford-Smith(5) who conducted a study of enuresis in a farm training colony.

The literature on the subject has emphasized the fact that enuresis is usually present in more than one member of the family. In our series 75 per cent of the 150 recruits gave such a history. This contrasts with the findings of Stockwell and Smith(4) who in the study of 100 patients found 21 who gave histories of siblings who were also enuretic. An explanation for this may lie in the fact that in his group there was an average of only 2.4 children to a family while in our series there was an average of 5.5, thus increasing the possibility of enuresis appearing in other siblings. Hubert(6) found that 40 per cent of his patients had parents with a history of enuresis and Addis(7) reported 26.6 per cent. In only 6.4 per cent of our cases was the recruit an only sibling, while Stockwell and Smith(4) found only siblings in 14 per cent of the cases they studied. Although no definite correlation could be found between the place in the family and the tendency to enuresis, it was felt that siblings at either end of the family scale were more prone to have this affliction than those who come between.

TABLE 2

STUDY OF FAMILIES OF 150 CASES OF ENURESIS

Enuresis and nervous traits	90 per cent
Enuresis in other members	75 per cent
Neurotic traits	70 per cent
Broken homes	29 per cent
Average no. of siblings per family	5.5
Only sibling	6.4 per cent
Oldest sibling	26 per cent
Youngest sibling	19 per cent

Enuresis and various nervous manifestations were present in 90 per cent of the families of the enuretic recruits. Excluding the enuresis, psychiatric abnormalities, such as somnambulism, nervousness, psychogenic fainting spells, "nervous breakdowns" etc., were found in 70 per cent of the families. This agrees with the statements of other writers who found that parental disharmony and maladjustment were present to a marked degree in the families of bed-wetters.

As a rule enuretic recruits attributed their condition to "kidney disease." They manifested a resigned attitude which was often supported by their families and frequently their family physician. They felt that since other members of the family were similarly affected their condition was familial, and that they would eventually outgrow it. The frequency of associated back pain fixed in their minds the idea that the enuresis was physical in origin.

As to etiology, many authorities subscribe to an organic basis for this condition while others hold to a psychogenic origin. Trousseau(8) described enuresis as a clinical entity and considered it an expression of an irritable bladder. Fuchs(9) concluded that a sphincter weakness in many cases and spina bifida in others was the cause. Campbell(10) studied 259 patients from 5 to 15 years of age in whom medical treatment failed and found organic disease in 50 per cent; 25 per cent were cured and 50 per cent were improved under urologic or surgical treatment. Many authors have considered spina bifida to be a factor in this condition, while others disagree. Karlin(11) presented an interesting study to show that, of children with no urinary complaints and considered normal, 54 per cent had spina bifida occulta, and that, of 25 patients with enuresis, 84 per cent had moderate to severe degrees of spina bifida occulta. Browne and Ford-Smith(5) found a high incidence of congenital spinal abnormality in their series of cases. Winsbury-White(12) believed that enuresis in both sexes is commonly associated with chronic inflammatory changes in the posterior urethra and the bladder neck.

The exponents of a psychogenic basis for enuresis have brought many theories to the fore. Holt(13) felt that the symptom is, in most instances, purely a habit which is often associated with other habits indicating an unstable or highly susceptible nervous system. Freud(14) early stated that nocturnal enuresis is a pollution unless associated with epilepsy. It has been considered as an expression of a fear of the opposite sex; a disorganized attempt of the child to get along well; poor training; a conduct disorder; deficient inhibitory tendencies; a weak ego; a psychopathic personality; a wish for attention associated with feelings of inadequacy and fear; a desire to return

to babyhood and the diaper stage; jealousy of a new baby and a desire to receive more of the mother's attention.

We feel, as a result of our investigation, that enuresis, as a rule, is purely psychogenic in origin. It is probably true that in some cases organic disabilities, such as anatomical anomalies, may cause enuresis. However, this occurs in only a small percentage. The majority of the cases studied came from rural communities and were from families of poor economic and low social standards. As is customarily found in families in the lower social and financial strata the number of offspring is comparatively large. All able-bodied members are required to work on the farm, in mills and factories to help support the family. There may be consequent feelings of insecurity, and individual attention and care on the part of the parents toward the offspring can never be adequate. They are too busy trying to keep the wolf from the door and whatever love and affection are available must be spread over a large family. The meager scraps of attention may be insufficient to bolster the child's sense of security. This in turn brings about the development of compensatory neurotic traits.

The high incidence of home disruption tends to confirm the fact that insecurity is a major factor in the causation of enuresis. The loss of one or both parents further decreases the amount of individual attention which everyone requires in childhood. This is the chief reason why enuresis is such a prominent problem in orphanages. Individuals who have experience in these matters know that an enuretic child when taken out of an orphanage and placed in a foster home or in an environment where he can receive a great deal of individual attention will often stop wetting the bed. However, the enuresis will frequently return when the child is again returned to the institution.

In childhood enuresis is often the result of an attention-seeking mechanism. Wetting the bed will call the parents' attention to the child. Changing bed sheets, frequent awakenings at night, scoldings, and even corporal punishment are really signs of attention and tend to appease the love-starved child. All these factors will inhibit the emotional maturity which usually comes with adolescence, and infantile traits are carried into and beyond puberty. The parents' own maladjustment and insecurity are also reflected in the offspring. The children tend to identify themselves with their parents and often take over many of their neurotic manifestations. Since other siblings are subject to the same environmental conditions they also frequently have similar difficulties.

In addition to the enuresis the bed-wetter's emotional instability and maladjustment are reflected in other activities. It accounts for the frequency of anxiety dreams which are so prominent in these cases. They are continually dreaming of falling and fighting. Sometimes the anxiety is translated into positive physical findings. Vasomotor instability, as manifested by mottling and coldness of the extremities and profuse perspiration, is often a sign of excessive anxiety and inward tension and occurs in all of us in moments of great stress and strain.

Although other writers report no greater frequency of enuresis among the colored than among the whites, our findings at the Norfolk Naval Training Station indicate a much higher incidence among the negro recruits. This can probably be explained by the fact that the social and economic conditions among negro families in the south are much poorer and therefore would lead to manifestations resulting from lack of security. However, other factors enter into consideration. The type of negro who enlists in the Navy as a mess attendant is by no means representative of the race. He usually is an unskilled laborer in civilian life with a poor educational background and a low standard of living. The most common reason for enlistment is a desire to get out of the home environment in an attempt to better himself financially and socially. Consequently the negroes who form the lowest strata of the group are attracted to the naval service.

Another explanation for the increased frequency of enuresis among the colored recruits is their tendency to develop psychiatric abnormalities referable to various organs of the body; somatic disabilities which have no organic basis are more often seen among negro recruits than among the white

recruits. Conversion hysteria with hysterical blindness, deafness, aphonia and paralyses are not infrequent manifestations.

The difference in the psychiatric abnormalities in the white and colored recruits is illustrated by the habit of nail-biting. This trait is comparatively rare in the negro and is much more commonly seen in the white recruit. The same is true of vasomotor instability. Possibly this type of symptomatology may represent a more primitive psychological mechanism. This is a very interesting topic which as yet has not been fully investigated.

A review of the history of individuals with enuresis reveals that in most cases certain incidents had a marked influence on the frequency with which bed-wetting occurred. It was found that automobile accidents, with and without injuries, severe falls, head injuries and operative procedures such as appendectomies and tonsillectomies affected the enuresis. Many of the recruits attributed the persistence of their affliction to these happenings. It seems that any threat to the individual's security tends to aggravate a pre-existing enuresis. It is well known that psychic causes, if strong enough, can produce irregularities in bladder function. The enuretic individual as a rule has no insight into the causation but attributes his condition to a physical basis. This mechanism is essential in order to prevent further inroads upon the enuretic's stability. Unfortunately, many of the physicians consulted encouraged this point of view by stating that it was due to "kidney disease." Medicinal therapy rarely helped and in no case was an attempt made to get at the background of the individual or to treat the parental maladjustment which was so often present.

On the other hand, marriage in many cases seemed to have a therapeutic effect. This is probably due to the fact that marital adjustment produces more stability and furnishes an outlet for instinctual drives.

It is interesting to note that enlistment in a military service may either aggravate or decrease pre-existing enuresis. In some individuals leaving the security of home and entering a strange environment where they are just another cog in a mighty machine may have a further disastrous effect upon their need for individual attention and feelings of security. These recruits are prone to develop malignant cases of nostalgia and bed-wetting will occur more frequently. Others, by enlisting in the Navy, gain the security which was lacking in their home environment and the enuresis will diminish or in some cases disappear.

The claims made that various surgical procedures have a beneficial effect upon enuresis have to be properly evaluated. Probably the results are due to the psychotherapeutic effect and not to the specific treatment. A symptomatic cure through such procedures is usually temporary. The etiological factors are still present and subjection to added responsibilities or increased tension in the environment may be sufficient to produce a recurrence. From a military point of view recruits who are enuretic are not satisfactory service material in that they are prone to become psychiatric casualties under combat conditions.

SUMMARY

One hundred and fifty cases of enuresis among recruits at the Norfolk Naval Training Station were studied. It was found that enuresis is not a clinical entity in itself but a manifestation of a deep seated personality disturbance. In addition to the enuresis, symptomatology of a neurotic nature was often present, such as somnambulism, nightmares, severe nail-biting and nervousness. The recruit as a rule, attributed his condition to kidney involvement and rarely sought medical attention. The bed-wetter is usually immature, maladjusted, emotionally unstable and insecure.

A study of the family background revealed the presence of numerous psychiatric abnormalities among the other siblings and the parents. There was a high incidence of enuresis and home disruption was a common finding. The parents had no insight into their offsprings' manifestations and used crude methods in order to effect a cure.

It is felt that the most common etiological factor in the causation of enuresis in the cases studied is the lack of security. This permits the persistence of infantile traits beyond puberty. The insecurity is due to

the presence of large families, home disruption, poor economic and social conditions, and neurotic parents.

BIBLIOGRAPHY

1. Davison, W. C. Abt's Pediatrics, Vol. 4, p. 867. Philadelphia, 1926, W. B. Saunders Company.

2. Bickford, J. V. Enuresis in children. Virginia M. Monthly, **63**: 271-274, August 1936.

3. Anderson, F. N. Psychiatric aspects of enuresis. Am. J. Dis. Child., **40**: 591, 818, Sept.-Oct. 1930.

4. Stockwell, A. L., and Smith, C. K. Enuresis; study of causes, types and therapeutic results. Am. J. Dis. Child., **59**: 1013-1033, May 1940.

5. Browne, R. C., and Smith, A. F. Enuresis in adolescents. Brit. M. J., **2**: 803-805, Dec. 6, 1941.

6. Hubert, W. H. de B. Ætiology of nocturnal enuresis. Lancet, **1**: 1281-1283, June 17, 1933.

7. Addis, R. S. Statistical study of nocturnal enuresis. Arch. Dis. Childhood, **10**: 169-178, June 1935.

8. Trousseau, A. Clinical medicine, Lectures. Translated by Cormack, J. R., and Bazire, P. V., **2**: 297. Philadelphia, 1873, Lindsay and Blakiston.

9. Campbell, M. F. Enuresis; its urologic aspects. J. Urol., **28**: 255-270, Sept. 1932.

10. Karlin, I. W. Incidence of spina bifida occulta in children with and without enuresis. Am. J. Dis. Child., **49**: 125-134, Jan. 1935.

11. Winsbury-White, H. P. Enuresis treated by urethral dilation. Lancet, **2**: 331-333, Sept. 20, 1941.

12. Holt, L. E., and Howland, J. Diseases of Infancy and Childhood. New York, 1917, D. Appleton-Century Co., Inc.

13. Hutchison, R. Enuresis. Brit. M. J., **2**: 206-208, July 31, 1937.

14. Freud, Sigmund. Three contributions to the theory of sex. Translated by A. A. Brill, Fourth edition, 1930, Nerv. and Ment. Dis. Pub. Co.

A NOTE ON TATTOOING AMONG SELECTEES

CAPTAIN JOSEPH LANDER, M. C., AND CORPORAL HAROLD M. KOHN (B. Sc.)
Cincinnati, Ohio

In the course of the neuropsychiatric interviews at an armed forces induction station we became interested in the tattooing frequently observed. Several interesting psychologic problems associated with tattooing suggested themselves to us, such as the personality types of the tattooed and the reasons lying behind the choice of subject, *e.g.*, the word "Mother" ostentatiously displayed on a flaming sun or a heart, the crudely erotic figures, or the extreme aggression suggested by bloody daggers. Largely because of an unavoidable brevity of interview, however, we were ultimately forced to limit the study to an investigation of the rejection rates among tattooed as compared with non-tattooed men.

For the purposes of the investigation one of us (J. L.) interviewed all tattooed men appearing before the board on an adequately long series of consecutive days. For reasons of military expediency the precise figures cannot be revealed; suffice it to say that all figures employed in the study are sufficiently large to render the percentages statistically valid. For example the total number of men examined at the station during the period of the study is measured in thousands, and the number of tattooed men in hundreds. The findings are of considerable interest.

The rejection rate for tattooed men was almost exactly 50 per cent greater than for non-tattooed men (43.8 per cent of all tattooed candidates were rejected, as compared with 29.9 per cent of the non-tattooed group). On 88 per cent of the days, the rejection rate among tattooed men was higher than among non-tattooed, there being therefore some days when non-tattooed rejections were proportionately higher than among tattooed men. On eight days, however, the rejection rate among the tattooed was double or triple the rate among non-tattooed; by contrast, there were no days on which the reverse held true, that is, when the rejection rate for non-tattooed doubled that of the tattooed.

The bases for these rejections were then studied, and divided into two groups: "neuropsychiatric" (psychoneuroses, psychopathic personality, neurolues, enuresis, mental defect, etc.) and "physical" (hernia, defects of teeth, eyes, limbs, cardio-vascular disease, etc.). We found that 58 per cent of all rejections among tattooed men were on the basis of neuro-psychiatric disability, in contrast to 38 per cent among the non-tattooed.

One of the sub-groups under our category of "neuro-psychiatric rejections" is "Administrative Rejections," comprised of those men disqualified for felonies or by reason of previous dishonorable discharge from some branch of the armed forces. Of the rejections among tattooed men 12.2 per cent fell into this group, in contrast to 4.8 per cent among the non-tattooed. Actually, corrected statistics would reveal an even greater proportion of the rejected psychopaths among the tattooed, because there were a number of men labelled "neurolues," "fracture," "amputations," etc., who could have been safely labelled "psychopathic personality" in view of multiple convictions for felonies.

It was noted that the number of tattoos per man varied from 1 to 25 or 30. We found that in the "anti-social group" (administrative rejections as defined above, plus the psychopathic personalities) 68 per cent had more than 1 tattoo whereas in those rejected for physical reasons or with a diagnosis of psychoneurosis or illiteracy, only 41 per cent had more than 1 tattoo. The latter figure is essentially the same as was the incidence of multiple tattoos among men accepted: 44 per cent of this group had more than 1.

The tattooed men rejected for neuropsychiatric reasons comprised 26 per cent of the total number of tattooed men, but they had exactly half of all the tattoos (40) which could be classified as erotic. There is thus a correlation between the character of the tattoos and the presence of significant psychopathology. An interesting speculation arises regarding the reason for choice of erotic subject. There is reason to suspect strongly

homosexual inclinations among tattooed men. Is the tattooed man attempting to arouse in himself a heterosexual urge by constantly carrying with him a sexually stimulating picture? Is he trying to persuade others of his interest in women?

The conclusion seems warranted that psychopathy or social or emotional maladjustment is significantly higher among tattooed than among non-tattooed men. This conclusion is of practical significance to neuropsychiatrists stationed at induction boards, affording a clue to some selectees meriting more careful study.

THE PSYCHIATRIC APPROACH IN PROBLEMS OF COMMUNITY MANAGEMENT

(From a Study of a Japanese Relocation Center)

THE SOCIOLOGICAL RESEARCH PROJECT [1]

The Colorado River War Relocation Center, Poston, Arizona

There are many approaches to the management of human society, whether it be the running of factories, towns, tribes, clubs or nations. Personnel organization as seen in business and government is usually based on production requirements and carefully worked out in charts founded on man-hours of labor, space, equipment and economic balance of cost and income. It is most often directed at immediate goals such as profit, building roads, maintaining law and order or winning a war. This approach when too narrowly logical in pursuit of its goal frequently gets into grave difficulties because man is not a logical animal. The method tends to operate on the fallacious hypothesis that man's primary motives are economic and that man is consistent in following those motives. It overlooks the fact that man is a creature of sentiments and patterns of behavior based on his past experiences and current struggle to maintain his securities and satisfaction in life—especially in the realm of his relationship to his fellow man. He lives on his beliefs whether they be fact or delusion.

This does not imply that man has no economic motives. Some of his most fundamental tendencies are tied to his subsistence needs and hence are economic. But economic motives are not the only motives, and even where the motive is basically economic, it may not take the form of logical adaptation to the current situation, but function in terms of sentiments and patterns of conditioning laid down previously.

For example, many a farmer rejects modern methods of soil conservation, not because he has carefully studied them and found they are unsuited to his needs, but because of complexes of sentiments that through the years have become part of him and which turn him against changes in his routine, against outside interference, and against attempts by the Federal Government to tell him what to do. As a result he goes on year after year losing his soil in a wholly illogical and uneconomic manner.

In the southern states, many decisions in government, industry and agriculture are made today not on the basis of immediate economic logic but on the basis of sentiments which arose from issues that existed 70 years ago.

Attempts to bring modern medicine to native people run into the same difficulty and logic gets stuck in numerous and complicated pre-existing sentiments to which the native's sense of security is tied. Nor does one have to journey so far as the habitat of native people to find this sort of thing. We all know intelligent people who patronize chiropractors and faith healers in quest of satisfaction which they evidently get; and if logic enters at all, it is merely in the form of a thin coat of rationalization with which these people defend themselves against their doctor friends.

One could give examples endlessly.

To the psychiatrist these phenomena suggest what he sees in a more exaggerated form in many of his patients—as for instance in a man who believes that the Ku Klux Klan is after him in spite of all reasonable evidence to the contrary and in spite of the impracticability and economic

[1] The Sociological Research Project of the Colorado River War Relocation Center is directed at improving administration by the use of applied psychology and social anthropology. It is sponsored jointly by the U. S. Navy, the U. S. Indian Service and the War Relocation Authority. The personnel is as follows: Lt. Alexander H. Leighton (MC), USNR—Coordinator, E. H. Spicer, Ph. D., Elizabeth Colson, M. A., Tom Sasaki, A. B., Chica Sugino, A. B., Hisako Fujii, Misao Furuta, Iwao Ishino, Mary Kinoshita, June Kushino, Yoshiharu Matsumoto, Florence Mohri, Akiko Nishimoto, Jyuichi Sato, James Sera, Gene Sogioka, George Yamaguchi and Toshio Yatsushiro.

wastefulness of spending the majority of his waking hours in avoiding his imaginary pursuers.

To say that man's behavior is often illogical is not the same thing as saying it is incomprehensible, although this is what the "practical men" are inclined to do when they get baffled by it. The behavior of psychotic and neurotic persons is often far from logical, yet psychiatry has not given up the struggle to understand it, but on the contrary has made considerable headway.

We may assume, as a working hypothesis, that all human behavior, overt and implicit, has some functional significance and is the product of forces and influences internal and external. Human nature, then, is a subject to be studied as part of the practice of human management, just as much as economics, engineering, profits and the other subjects usually considered. Good executives have, of course, always done this. In fact, their success has depended largely on their intuition in the matter. However, the procedure has been by rule of thumb and hunch rather than a scientific approach.

In recent years, the social sciences have moved more and more toward practical contributions to the understanding of the human element in management. The skills of history, sociology, psychology and social anthropology as well as economics, have been introduced. Since psychiatry has contributed a good deal toward understanding human sentiments and motives and since it has techniques for investigation, it seems reasonable to suppose that it also might have something to offer. At the very least it has legitimate claims to the field of mental hygiene which should be a part of all attempts to plan and direct human society for improved human welfare.

L. J. Henderson [2] was accustomed to point out the benefits applied social science could derive from the methods and thinking of clinical medicine and some of his students have carried this view into actual practice. The development of these techniques, however, represent as a rule borrowings by sociologists from medicine rather than experimentation by a physician in social science. We have recently been engaged in a study of a Japanese Relocation Center and one of us, being a psychiatrist, has had an opportunity to attempt methods derived from his training.

In studying groups of people, just as in studying individuals, problems of behavior appear which may be called "chief complaint." In the case of a single individual, the common psychiatric practice is to assimilate carefully this chief complaint and then carry out a systematic search for contributory factors in the person's physical make-up, past history, emotional and intellectual equipment, sentiments and interpersonal relations. From what he gathers, the psychiatrist attempts to construct a picture of deeper motives and less obvious behavioral patterns. If successful he eventually comes to see the chief complaint as part of a dynamic process involving the patient's whole equilibrium of living and with this concept as a guide, he tries to dissolve the complaint by bringing about changes in the patient's life-patterns and outlook. Put more briefly—after the definition of the chief complaint comes examination, diagnosis and therapy.

Simple and everyday as this seems and is, it contains much that is perhaps not too consistently applied in social science. Although many people who have studied anthropology and sociology have found all this out for themselves, nevertheless the dazzling techniques of the precision laboratory have swayed more than one worker to impractical attempts to apply such methods to unsuitable material. The clinical psychiatric approach has the following contributions:

1. It treats human behavior as behavior without feeling impelled to reduce it to laws of mass and motion and chemical interaction before being able to deal with it.

2. It is at home with multiple causality and thinks in preponderance of tendencies rather than in absolutes. It does not make its decisions and definitions on the presence or absence of single items, which is characteristic of much academic thinking. Instead, it uses the concept of the syndrome for defining its material much as the biologist uses multiple factors in describing a species, or an archæologist in determining the chron-

[2] The Study of Man. University of Pennsylvania Bicentennial Conference, University of Pennsylvania Press. 1941.

ological character of a particular piece of pottery.

3. It thinks in terms of states of equilibrium in which many forces are related rather than in simple cause and effect relationships.

4. It looks on all symptoms or single bits of behavior as having a fundamental connection of some sort with the life of the individual.

5. In particular it emphasizes the rôle of interpersonal relations which influence the members of societies and hence the societies themselves.

6. It has techniques for getting at the less obvious forces that underlie overt behavior and which are tied into a person's mechanisms for maintaining a sense of security.

In order to illustrate these points with a concrete problem, a particular situation in the community we have been studying will be described. First, however, a brief description of the community must be given.

In the spring of 1942, all persons of Japanese ancestry were evacuated from those Western Defense Command areas which included California and parts of Oregon, Washington and Arizona. The approximately 110,000 people so removed were eventually placed in camps called "relocation centers." Discussion of the reasons for this move is beyond the scope of this article, but we should like to emphasize that the centers should not be confused with concentration camps. The residents of the relocation centers are those persons, both citizen and alien, not considered enemies of the United States. Internment camps were established for all suspected persons. At the present time the evacuees in relocation centers are permitted to settle in parts of the United States other than the Western Defense Area, wherever people treat them in accordance with the American tradition of welcome to all honest citizens without respect to creed or color, and will protect them against ignorant and self-appointed vigilantes. A large number of Americans of Japanese ancestry are now in the war industries and in the army.

The center where we have been making our study is called Poston, had a population a little over 17,000 and is divided into three units lying three miles apart in the middle of the Colorado River Valley on the boundary between California and Arizona. It is about seventeen miles from the little desert town of Parker on the Phœnix-Cadiz branch of the Santa Fé railroad. The land around the camp is covered with mesquite, arrow weed and other bushes which spread bright green on each side of the river till they end with a sharp margin where the cactus plains begin or mountains of bare rock arise. The landscape suggests in some ways the Valley of the Nile.

At the site of each camp, the mesquite has been cleared away leaving the bare and dusty earth and on this have been built blocks of military barracks covered with black tar paper. Irrigation has enabled flower and truck gardens to come into existence.

The problem which faced the administration was the creation of a community under adverse conditions. The climate is severe and living quarters are necessarily somewhat crowded. The individuals living under these circumstances have been uprooted from their homes, from the normal flow of their existence, and from the investments of lifetime work. They have been thrown together without regard to class, economic status or degree of Americanization. The future appears to them dark and uncertain.

Nevertheless, this was the raw material for making a community. People had to live with each other, develop government, education, health-care, work and recreation which would answer their biological, psychological and social needs. They had to do this as quickly and cheaply as possible, not only for their own sakes, but also to permit them to swing into the maximum production of food and certain other goods needed by the nation.

The research of our department has been directed at a study of this attempt to create a community. We have followed administrative acts as closely as possible in order to discover their effects and to note what works and what does not work. We have tried to draw practical conclusions that can be applied toward greater efficiency of government.

The administration has foreseen a postwar world in which many relocations will occur all over the earth. Consequently, it

has regarded the camp, which is primarily designed to meet the needs of the moment under optimal democratic methods, as affording also an opportunity for gathering experience in dealing with relocated or disintegrated communities. The research staff considered the understanding of this aspect of the problem one of its most important objectives. We have tried to acquire knowledge, learn methods and train personnel so that when the time comes to organize and administer retaken lands, we shall be in a position to be helpful. What we learn about community building under adverse conditions here may one day be very pertinent to dealing with community management under even more adverse conditions.

Chief Complaint

In the fall of 1942, the professional cotton pickers who usually migrate to the Parker Valley in season were in other work and consequently there was a serious danger that the valuable long staple crop would be lost. An opportunity was created for the Poston residents to go into the cotton fields and work at going wages.

Very few responded. This was disappointing to the administration and it was thought that the residents were losing a valuable opportunity to bring money into their community, to build up good relations with the Parker Valley ranchers and to prove to the American public in general that they were hard working and loyal.

The Examination

By attending meetings, by interviewing a variety of persons in the administration and among the residents and from many casual conversations, we pieced together something approaching a total picture of the situation.

There was a tendency on the part of those at a distance from the residents to leap to the firm conclusion that the apathy was due entirely to resentment at evacuation and all it entailed. There was no doubt some truth in this, but the mistake was to regard it as more than one among a number of factors.

There was some feeling on the part of the older, native-born Japanese that since they had not been allowed to become citizens and were classed as enemy aliens, it was not right for them to pick cotton that was to be used for military purposes. They thought that according to international law they should participate only in work that had nothing to do with the war effort. Otherwise, they might find themselves to be people without a country.

There were some Americans of Japanese ancestry who expressed bitterness over being placed in relocation centers.

These attitudes were probably representative of strong feelings on the part of certain individuals. The factors which influenced the bulk of the community, however, were somewhat less obvious and a little more complicated.

In the first place there was not a great deal of excess labor available. Out of a total population of 17,202 there were 7676 employed in the community. According to the project employment division this is a good deal higher proportion than in an average community. Eight hundred twelve more were out harvesting in the beet fields of Utah and Colorado. Those working in the community did not, of course, get prevailing wages, but cash advances amounting to $16.00 a month for the average worker, and $19.00 for professionals, plus shelter, food and a small clothing allowance. Both the employment department and the elected city council (composed of Japanese) feared that if prevailing wages became available in the cotton fields to the residents of Poston, there might be a general exodus from the camp every day with the result that the community would collapse from lack of cooks, construction men, office help, police, firemen and the various workers in the health department. It was decided that while each man should be paid full wages by the cotton ranchers, everything above $16.00 per month should go into a community trust fund which would be used for the common good.

The Japanese council voted this, but that did not mean that the community followed them. In fact there was as yet no community in any real sense but rather masses of people of all different sorts and classes and it was not surprising that in the space of a few months they had not been able to weld themselves into one coordinated group. They

were split into numerous segments with different opinions. Many felt that it was not desirable to become welded together since they had been told that they were in their present fix largely because they had clung too closely to each other in the past. Some said the trust fund idea was "communistic and un-American." Others just didn't see any sense in working if they were not going to benefit as individuals. What did they know of the evacuee council member who represented them? They had never seen him before Poston; how did they know the trust fund would be honestly handled? The result was endless argument for and against the trust fund, while the cotton stood in the fields.

Gradually, odd groups such as the press, the council, the block managers and the employees of various offices went out for a day at a time so that a little sporadic picking was done and the proceeds were turned into the trust fund.

Diagnosis

It seemed that the greatest difficulty with cotton picking lay in the fact that it was hitched to a plan that required the support and enthusiasm of the whole community at a time when there still was no community in any real sense. The over-all trust fund for the three units was too big, too distant, too uncertain.

Therapy

While the administration was mulling over these matters, the schools asked to be allowed to go picking and to use the money for school improvements, not the community trust fund. This was granted. Within a few days church groups, recreation societies, and a number of blocks had expressed themselves as willing and anxious to go out on the same basis—the money would go neither into the trust fund of the whole community, nor into an individual's pocket, but would go into a smaller trust fund controlled by a local, face to face group of people who knew each other and were able to plan together how they would use the money for their mutual benefit. This trend was developed by the administration and there were soon more people wanting to go picking than there was transportation to carry them. Shortly after things were well under way, forces outside the control of the community, the administration and the ranchers put a stop to the picking. The ranchers attested to the success of the Poston residents by sending a telegram to the proper authorities pointing out the good work that had been done and requesting that the opportunity for it be continued.

The importance of this experience to the administration went far beyond the cotton picking incident itself. The realization that they were dealing with not one or three but many different communities with widely different sentiments was a matter of vital importance in all administrative plans, whether for developing agriculture, promoting self-government, maintaining law and order, safe-guarding health or furthering education. Two new administrative tasks were created:

1. Planning all immediate projects realistically in terms of the many small communities rather than the single ideal one.

2. Promoting the integration of the various communities into a united and more efficient whole.

Summary

Some general aspects of the management of human society are discussed and it is pointed out that basic knowledge concerning human behavior must be incorporated in public administration as well as matters of supplies, wages and man-hours of labor. It is stressed that planning is too often based on an idealized concept of an economic and logical man, rather than based on a realistic appraisal of how man actually behaves and what common forces motivate him.

Among other social sciences, psychiatry has a philosophy and an approach to problems of human behavior which can be applied to some of the difficult questions of human management by administrators, in a manner very similar to their use in the clinic. The question, How can I get people to carry out this program? and the question, How can

I bring this patient to a more adjusted way of living? have much in common. In both it is desirable to define sentiment patterns and gain insight into the multiple motive forces that lie within them.

To illustrate these points, a description of a particular administrative problem in a Japanese relocation center is given and it is analyzed in terms of a psychiatric approach. Although the problem was not solved purely by the analysis, insight into the nature of what was happening was attained and the desirable course of future administrative action was made clear.

THE MYOKINETIC PSYCHODIAGNOSIS OF DR. EMILIO MIRA [1]

JOHN L. SIMON, M.D., New York, N. Y.

Dr. Emilio Mira's new diagnostic and prognostic technique, the myokinetic psychodiagnosis (M.P.D.) is based on Mira's principle of psychomyokinesis which he states as follows: "Psychological space is not neutral; all the movements of the individual acquire a peculiar meaning according to the direction in which they are performed. As E. Strauss expresses it, 'Muscular contraction is a process within the organism, but movement itself is a function of the relationship between the individual and his world.' Mental activity may in turn be considered a succession of acts implying *postural* changes; whenever the mental equilibrium is disturbed, there will be a corresponding distortion of movements evident to the degree that any voluntary attempt at compensation is eliminated. Consequently, if an individual is requested to perform small oscillatory movements in the fundamental directions of space without visual control, the observed shifts will be indicative of the predominant muscular patterns and will furnish insight as to his fundamental attitudes of reaction." The relative predominance of extension and flexion in various directions corresponds to the amount of and direction of expenditure of the individual's psychic energies.

The test is performed by the individual who is requested to retrace forms printed in a specially prepared notebook. At first the retracing is done under visual control, but after three attempts a screen is placed between the eyes and the book so that the drawing is made blindly, and so errors will be in accord with the relative ease or difficulty of the respective movements, which in turn depends upon whether flexion or extension in the direction tested is easier for the individual. The two hands are tested separately during each phase of the test, with some exceptions. The linear test forms include horizontal lines, sagittal lines and vertical lines, the latter produced by elevating the test book from the table. Zigzag lines are employed to test the subject in oblique directions; the subject first traces three zigzags; after three complete movements are performed the individual is screened. In the zigzag test both hands are tested simultaneously rather than one after the other as in the lineograms. As the zigzag test checks the results of the sagittal lineograms, so the staircase test checks the vertical lineograms, for the book is again elevated during the tracing of the staircase. Circles, chains, ladders (parallels), and U's complete the tracings. (See Figs. 1-5.)

Interpretative data include extrinsic or verbomotor, which consist of the actions and remarks of the individual in relation to the test, as well as the time it takes him to complete the performance, and include intrinsic data recorded in the lines drawn. The test should be performed at least twice with a time interval as a check of consistency. However, any given protocol should be judged as follows:

In the case of the linear tracings (lineograms) factors to be considered are length, direct lineal deviation (sagittal in the case of sagittal movements, horizontal in horizontal movements, and vertical in vertical movements), secondary lineal deviation perpendicular to the direction of the movement (*e.g.*, horizontal in the case of sagittal movements), and rotation of the axis of the movements (axial deviation). In the case of the zigzags, more complicated factors enter, such as the dominant hand (since both hands perform this test simultaneously), ratio of number of egocifugal to egocipetal angles, the presence of zero and inverted angles, axial deviation, and (pathological) loss of the praxical configuration. In the staircase test, to be considered are the ratio of ascending to descending steps, the relative extent of the ascending and descending portions of the staircase, reversion or inversion of stairs, and loss of the configurations. In the circles one considers displacement and alterations of size. In the evaluation of the chain, the relationship between the initial and the final sizes of the links, the tendency to break or heap up

[1] Abstract from the Thomas W. Salmon Memorial Lectures 1942, published under the title "Psychiatry in War" (New York: W. W. Norton & Co., Inc., 1943).

FIG. 1.—Lineograms (or Kinetograms). Myokinetic Psychodiagnosis—Part 1. Example of direct lineal deviation in all figures.

FIG. 2.—Zigzags. Myokinetic Psychodiagnosis—Part 2. Zero and inverted angles, especially in lower figures, due to praxical reversion; also axial deviation and interlacing of pencils—showing a subject with predominating attitude of introversion.

the chain, the degree of closure of the links, the clockwise or counter-clockwise direction of the drawing, and the degree of accuracy of the chain are factors to be noted.

On the basis of the direct lineal deviation in the lineograms, Mira derives the coefficient of coherence which expresses the similarity between the records made with the two hands. From two records of the same hand with a time interval he derives the constancy or fidelity of the records, greater in the left than in the right hand of right-handed people. In superior adults Mira found, as compared with records of individuals taken at random, a smaller difference between the length of the drawings and of the models, a smaller average of direct and secondary lineal deviations, a complete absence of axial deviations, and larger coefficients of coherence and constancy.

From a study of children, in numbers still inadequate for definitive conclusions, Mira found many of the alterations that occur in the records of pathological adults, even in an exaggerated form. Whereas in cultivated adults the left hand reveals the genotypic and primary phenotypic contribution to personality, in contrast to the less constant right hand which reflects the personality of the moment, in children both hands express almost identical data. The left hand Mira terms temperamental, the right characterological.

In abnormal adults, the most numerous group so far studied, very promising results have been obtained both in diagnosis and in prognosis. Mira lists as characteristics of the schizophrenic syndromes disorientation or axial twisting, especially in the sagittal kinetograms; a tendency to reverse the movement being performed; a tendency to disintegration of the configurations; irregularity of the impulse sometimes notable in the weakening of the impulse and at other times in sudden increases of space, intensity and extent; and lack of synchronization of the combined simultaneous movements of both hands in the zigzags. Together with these signs there is a peculiar general qualitative impression of clumsiness, crudity and lack of style.

In what Mira calls reactive forms of the

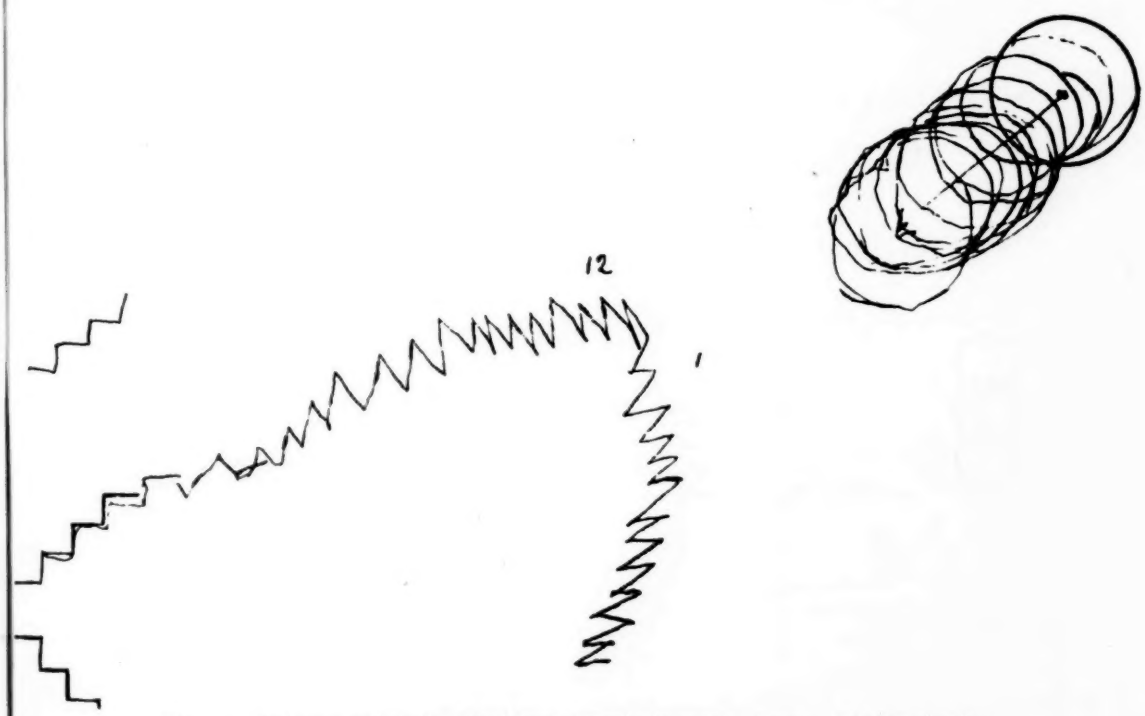


FIG. 3.—Staircase and circle. Myokinetic Psychodiagnosis—Part 3. Disorganization of praxical configuration, purely pathological.

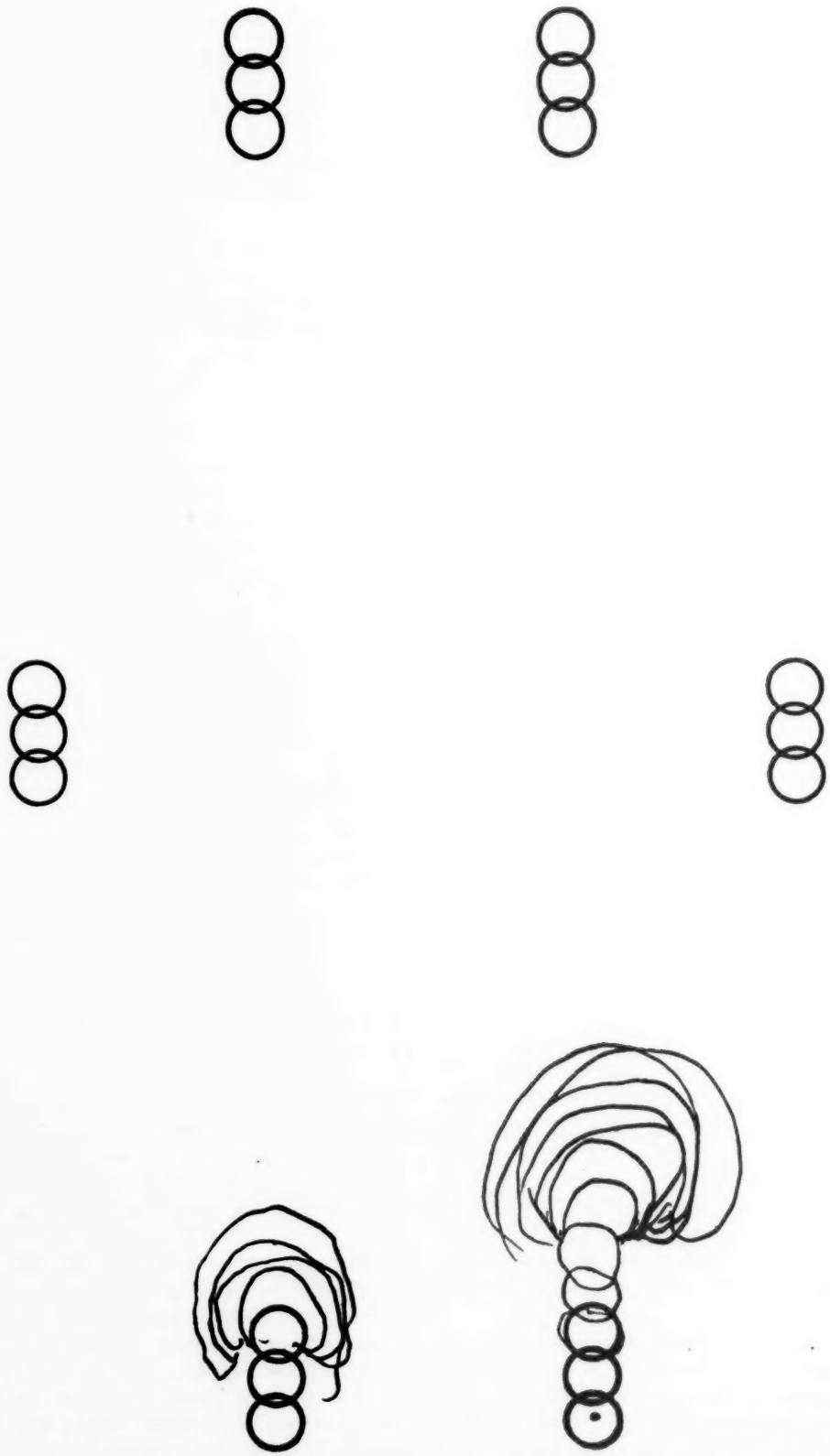


FIG. 4.—Chains. Myokinetic Psychodiagnosis—Part 4. Closing degree of link. Link left opened indicates negligence in finishing and lack of perseverance.

schizophrenic syndrome, where the symptoms are psychologically comprehensible and are motivated by psychological conflicts, the abnormalities of the record are predominantly expressed in the right hand in right-handed individuals and *vice versa*. The complex kinetic patterns, staircases, chains and U's are retained, and axial disorientation is slight in comparison with the signs of introversion and active negativism as evidenced by interiorization (deviation toward the midline) of the horizontal kinetograms and numerous reversions at the end of the zigzag.

FIG. 5.—Parallels and U Tests. Myokinetic Psychodiagnosis—Part 5.

In acute active schizophrenic processes there is almost constantly the *paranoid focus,* which consists of the peculiar confluence of the direct deviations of the right kinetograms toward the center of the paper. There are also reversions and axial torsion of the zigzags, crossing of the parallels (successive rungs of the ladder), and deviation in the U's, chiefly in the egocifugal drawings. Yet the complex configurations are fairly well maintained, with no loss in style or general architecture of the kinetic patterns initiated under visual control. As the symptoms of the disease become aggravated, the forms of the kinetograms become affected, so that the chains are distorted, dislocated and clouded, the staircase is transformed into a formless conglomerate of movements, and the zigzag disappears as such. When all these abnormalities appear in both hands, they indicate that previous attacks have occurred or that the patient is suffering from a form of *schizocaria* or the *catastrophic schizophrenia* of Mauz.

In temporarily inactive processes, which have improved spontaneously or as the result of treatment, the abnormalities of the record almost disappear in the right hand drawings, but not in the left. This criterion is valid only in right-handed people: not enough left-handed individuals have been studied to draw any conclusions as to them.

In the terminal forms of the schizophrenic processes abnormalities are apparent in the records of both hands. Expecially noticeable are the secondary deviations in the horizontal drawings as well as the disintegration of the configurations.

The M.P.D. offers a valuable prognostic aid in the treatment of schizophrenia, since the presence or absence of improvement in the tracings serves as a check of the clinical course. When the right hand abnormalities disappear and the left continue almost unmodified or even aggravated, one may expect temporary and incomplete recovery. The disappearance of the left hand abnormalities offers a much more favorable prognosis.

In the case of patients suffering from cyclothymic processes, Mira found the most striking M.P.D. alterations in the vertical plane. In the asthenic or physiogenic depressions there is a decrease in the vertical kinetograms, precipitancy of the descending staircase, heaping of the ascending chain, breaking of the descending chain, and a fall in the circle. There is no increase in aggressiveness (sagittal advancement) however, introversion of the lineograms, nor significant alteration of the length.

In melancholy depression there is evidence of the rage felt by the subject against himself, with frank introversion of the horizontal kinetograms, increase and irregularity of the length of the latter, emphasis on the egocipetal movement in the zigzags and parallels, as well as the vertical changes common to other depressions.

In the agitated depressions, there is a tendency to increase the length of all movements throughout the test. Despite the rapidity of the drawing, the complex configurations are maintained.

Psychogenic or reactive depressions are characterized by a downward shift of the dominant hand in the vertical plane whereas the uneducated hand maintains the level. There is also a pronounced inward shift of the horizontal movements of the dominant hand.

The records of non-psychotic psychopathic personalities showed low coefficients of coherence and of constancy, increase in the average of direct deviations in the lineograms always greater than one centimeter, imprecision and instability of the movements of the temperamental (left) hand which is dominant in the zigzag, large secondary lineal deviations, appearance of signs belonging to the manic-depressive and schizophrenic groups, frequency of initial tremors in the right horizontal kinetogram, and great average variation between the length of the model and that of the drawings especially in the left hand. Cases of defects, both congenital and acquired, show failure to reproduce the complex forms.

It is concluded that the similarities existing between one hand and the other are indicative of the intrapersonal cohesion or consistency. The uneducated hand expresses the constitutional or genotypic attitudes (temperamental hand) while the educated one expresses phenotypic characteristics (characterological hand).

While the ascending and descending move-

ments in the vertical plane provide a general notion of the present position of the patient in the diathetic scale from elation to depression and serve to measure the psychomotor tension that can be liberated in the test, the flexor and extensor movements in the sagittal plane suggest the relation between the ego and the world. When a rapid selection of men is necessary under emergency conditions, Mira suggests picking for responsible positions men with a "constitutional" hand which shifts slightly upward in the vertical lineograms and a "characterological" hand that is well controlled in the horizontals and shifts slightly forward in the sagittals. They possess excellent vitality, good aggressiveness and perfect voluntary control, according to the interpretation of the test.

The M.P.D. is a convenient, rapid method for detecting the psychopathic personalities as well as the potential leaders among a group of individuals. It also serves to check the psychic energies (morale) of a given individual or group over a period of time. Accordingly, Mira believes that this test is especially adapted to military use.

A STUDY OF FORTY MALE PSYCHOPATHIC PERSONALITIES BEFORE, DURING AND AFTER HOSPITALIZATION[1]

W. LYNWOOD HEAVER, M. D., White Plains, N. Y.

The findings of this study indicate that something can be done for the broader, less vicious and only moderately unbridled psychopathic personality.

Forty male patients diagnosed as psychopathic personalities were admitted to the New York Hospital—Westchester Division, White Plains, New York, between 1935 and 1940. The diagnostic criteria were those established by Cheney (1): emotional immaturity or childishness, marked defects of judgment, lack of learning by experience, impulsive reactions without consideration for the feelings of others, and emotional instability, with rapid swings from elation to depression, often apparently for trivial causes. Of the 40 patients, three-quarters were free from psychosis, while 10 had psychotic episodes characterized variably by excitement, depression, toxic delirium, paranoid trend and perplexity. The average age at time of hospitalization was 28.7 years; the youngest patient was 17 and the oldest 50 years. Over half the cases, 22, were in late adolescence or young adulthood.

Consistent with the admission policy of the hospital, these 40 men comprised a carefully selected group. The majority of them entered the hospital voluntarily, had come from a metropolitan urban environment, and were of comfortable economic status. Racially, 35 patients were of mixed American and European stock; 5 were Jewish.

The average duration of illness was 6.75 months, although the range was 5 days to 18 years. Frequent contributing factors appeared to be loss of money, feelings of social inferiority, complexes over minor physical disabilities, sexual frustration, overt homosexuality, and discordant home environment. The most frequently mentioned factor was "poor sex hygiene." Social aberrancies resulting in admission to the hospital included: misuse of funds, forgery, assault, sustained irresponsibility, stealing of property, marihuana, barbital or bromide addiction, transvestitism, impairing morals of a minor, exhibitionism, lack of interest, chronic discontentedness, anxiety, restlessness and extravagance. Alcoholism was given as the primary reason for admission in only 3 cases, although it played a secondary rôle in 7 others.

One-half the entire group had forebears who displayed psychopathic personality traits. Only 2 patients had mothers who seemed well-adjusted. The large remainder of the group had mothers who were obviously inadequate and poorly integrated women. They tended to be over-sentimental, over-indulgent and overwhelming in their constant solicitude for the patient. These mothers were greatly lacking in firmness or the ability to foster character-building discipline. Most of this mother-type had wedded men who were their antithesis in personality structure. Over half the fathers enjoyed more than average economic or professional success; they were aggressive, dominating, pompous and critical; they were too busy making money, winning friends and influencing people to get to know their sons and learn what their sons thought about them. They believed their parental devotion could be proclaimed in no better way than by an unstinting financial provision. Not infrequently, they boasted *ad nauseum* that their success was self-made. In about one-fourth of the cases, the mother or father had a personality like that of the son and made adjustments in a similar manner.

While severe adjustment problems did not arise until 14 of the group had chronologically reached adulthood, and while the great majority did not require hospitalization until that time, none of the 40 cases was free from evidence of gross antisocial behavior prior to adult life. Eighteen were problem children during infancy. Eight of these were recalled to have had temper tantrums; 12 were diffi-

[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association, Detroit, Mich., May 10-13, 1943.

From the Clinical Services of the New York Hospital—Westchester Division, White Plains, N. Y., Clarence O. Cheney, M. D., Medical Director.

cult to discipline, being stubborn and resentful of punishment. During the plastic, formative years of childhood, 9 more failed to make a satisfactory adjustment to home, school and community. In the adolescent era, 13 patients manifested their first serious antisocial behavior and disregard of disciplinary measures.

Well over half the total group lived in homes that held a considerable degree of environmental stress, such as disruption of family unity by divorce, separation or death of a parent, association with mentally ill or poorly adjusted relatives, continued exposure to predominately female households, and competition with more capable or favorite siblings. Five of the 40 men had luxuriated in the status of being an only child. Three-quarters of the remaining patients had been the youngest of the family.

The intellectual capacity appears to have been average for 30 of the group. The majority had been exposed to private schools, with only a small minority attending public, parochial or military schools. Of the 10 who were still students at time of hospitalization, none had been working his way through school. Six got into trouble during high school; 9 made poor adjustments in college. At one time or another during their school careers, 9 were expelled.

Almost all the patients were criticized by their parents as being spendthrifts. Prior to admission, over half the series, 24, had been employed in occupations ranging from professional work to unskilled manual labor.

As these individuals went through childhood and adolescence, egotism, fearfulness, sensitiveness, narcissism, anxiety and moodiness most frequently characterized the evolving personality. They became restless and were at cross-purposes with others most of the time. They felt socially inadequate, harbored inferiority complexes of one sort or another, had no hobbies, preferred solo types of athletic endeavor, were poor losers, and were miserable if they could not direct a given situation according to their ephemeral whims and caprices. They sought social comfort among companions who joined them in scoffing at others who accomplished things the hard way.

Especially during adolescence, psychosexual conflicts, as well as homo- and heterosexual activity, loomed large. Fourteen exhibited a marked mother attachment, accompanied to a varying degree by fear of the father. The awareness of ambivalent feelings toward the mother, together with the recognition of their own inadequacy, prompted some patients to indulge in alcohol. They claimed that a state of intoxication reduced the magnification of their adjustment problems.

The 40 patients spent from nine days to one year in hospital, with an average residence of 3.85 months. The adjustment here ran rather parallel to the previous adjustment in the community. Almost half the number, varying in age and duration of illness, quickly made and kept a good rapport with their hospital surroundings. A few more ultimately became stabilized. Only 3 were adamant in their attitude of negativism. These 3 were unalloyed psychopaths—from their earliest years displaying adamantine stubbornness, temper tantrums, utter selfishness, complete egocentricity, viciousness, sadism and a total lack of capacity for any substantial postponement of gratification. In type, these 3 coincided with Karpman's so-called "anethopath"(2). They were helped by nothing and by nobody. The large remainder demonstrated only a spasmodic capacity for satisfactory adjustment, moodiness being marked in about three-fourths of the total group. Interviews with a physician were held frequently. The trends of the patients were consistent with their previous history and amounted largely to projection, rationalization, evasiveness and defensiveness. Ten men steadfastly refused to consider that they had any problems to discuss. Eighteen patients presented some vestige of insight; they felt that "something was wrong" with them or they would not be in a hospital. This same number conceded that hospitalization was of benefit to them, often for the simple reason that, as long as they were under an organized régime and away from home, factors were not operating that previously had threatened their emotional comfort and had, therefore, engendered censurable behavior.

The capacity to see beyond the more superficial aspects of their problems was achieved

by 12 of the 40 patients. This deeper insight appeared to bear no specific relationship to age or duration of illness, but it is significant that it occurred only in cases of good rapport between patient and physician. Among these patients, ambivalent feelings toward the mother or both parents were constant findings. A frustrated desire to imitate or excel the highly successful father was likewise evident. Some of the men who recognized homosexual fixations as one of their major problems cited their lack of success in emancipating themselves from their mothers; several such patients later married and adjusted successfully to women who were much older than themselves.

In addition to therapeutic interviews, treatment consisted of required participation in a daily prescribed routine of supervised gymnasium activities and attendance in the occupational and hydrotherapy departments. Intramural treatment was augmented by social activities with women patients, including dances, bridge games, movies, etc. None of the patients was allowed freedom of the grounds until he had obviously adjusted satisfactorily to the hospital routine and régime. It was customary not to allow visiting at home until a considerable improvement in mutual attitudes was sustained by patient and relatives. This therapeutic set up, in the restricted atmosphere of a hospital, often represented the patient's first experience in finding that there were other ways of managing himself than by temper tantrums, childish petulance, and sadistic gestures toward the destruction of the social standing of his parents.

According to the patient's condition at time of discharge, 36 of the 40 apparently had benefited from residence in hospital. On leaving, the group in general voiced ambitions that were in keeping with their previously expressed frustrations. Some homosexuals wanted only to return to their lovers; as usual, the alcoholics wished never to drink again. Some wanted a job and the opportunity to live away from home. A few desired "to start all over again" and become men like their fathers. An occasional patient had no plans.

Follow-up data, covering a period of from 2 to 7 years, have been obtained on 31 patients. Whereas at staff conference only 2 patients were unanimously granted a good outlook and 30 were considered by the doctors to have a doubtful or poor prognosis, it now appears that 23 of the 31 have become more acceptable to society, *including 16 who can be regarded as essentially recovered.* Recovery, as it is used here, implies that the patient has demonstrated a sustained ability to keep out of trouble and to be regarded by others as fitting acceptably and consistently into the family and community patterns.

It is noteworthy that the follow-up data fail to indicate that patients whose aberrancies began only during adolescence have made better adjustments than those who began their antisocial behavior in infancy or childhood.

In the present National Emergency, 11 of the 40 patients have tried to enlist. Six were rejected, apparently on their hospital record. Four were accepted for service, including a very seriously involved patient, whose adjustment difficulties dated from his earliest years. He had been discharged from hospital after a residence of 5 months, considered much improved. He lasted in service one month before being sent to a Federal Penitentiary for stealing.

Another patient, now married, had since childhood been a non-conformist, with a contempt for discipline. When he sought to enlist, he was rejected because of poor vision. He succeeded, however, in getting into noncombatant service and from there into officers' candidate school. He graduated and is now somewhere overseas.

Another man, who had exhibited psychopathic personality attributes since childhood, was hospitalized at the age of thirty. His depression was rooted in the conviction that he could not resolve his chief conflict, homosexuality. After two and a half weeks in hospital, he left, improved. As the years went by, his father died, and his aberrant behavior largely subsided. In 1941 he married, only to enlist 9 months later. After 4 months of army life, he applied to officers' training school; he was ultimately commissioned. From overseas, his mother has received a letter stating he is "well and very happy."

Of the others, 3 are successfully functioning in the American Field Service, another holds an important diplomatic post, 3 more are working in defense plants, and one is an air raid warden.

DISCUSSION

A study of the 40 cases in this series definitely indicates that one of the most important psychodynamic elements affecting social maladjustment is the type of early environmental conditioning provided by a mother who overwhelms her son with her indulgence and solicitude, and by a father who is highly successful, driving, critical and distant. An infantile pattern of conduct in the child is often unintentionally perpetuated by parents whose unconscious immaturity is reflected in their own presumably adult actions and attitudes. Under such conditions, the developing individual has little opportunity to cultivate the emotional adequacy and feeling tone that are forged only in the fires of sublimation and postponement.

In the period of infancy and childhood, the youngster learns that, to obtain gratification of his desires, he need only turn to his mother. If this recourse fails him, a temper tantrum produces results. Consequently, faulty habit training is established, as it is in dementia præcox. The receptive and plastic mind of the child inevitably becomes conditioned by a type of uncritical maternal devotion that is not tempered with good judgment or a respect for the virtue of discipline. The child who is thus hampered finds it difficult to identify himself with his father because of the latter's indifference or his frequent carping and goading criticism. On the same basis, he resents the paternal image-ideal of tremendous success. Defensively, he seeks to protest against the male-image, not only toward the actual figure of his father, but also toward the collective father-image, the masculine world of business, finance and economics. He finds himself more comfortable in a woman's world. In a masculine environment, whether it is social or business, he feels insecure, inadequate, untutored and ill-prepared. As he passes through childhood and adolescence, his world becomes more populated with men. As the challenge grows greater, his perpetuated immaturity induces the formation of a protest against his own sex and any implication of intra-sex rivalry. When he encounters frustration of his desires he makes substitutions for his infantile temper tantrums. That which he cannot obtain he seeks to destroy. Large bills are charged to his father. Checks are forged. He gets expelled from school for insubordination and destructive deviltry. He exhibits moral deficiency. One day he lands in jail. His father, with his money and influence, tries to hush up the charges. The boy discovers that, in his censurable activity, he possesses a powerful weapon for bringing shame and distress to his parents. He continues to use this weapon in an effort to puncture the bloated success and ego of the father he has often inwardly wished he might emulate. Emotionally obtuse except for dramatic display, he rationalizes his difficulties by blaming others. He alleges that his parents have opposed his burning ambition to pursue one career or another; he insists that his father, who has never understood him, has denied him adequate opportunity to do things in the manner he is sure is the right (and easiest) way.

The prognosis in the main group of psychopathic personalities appears largely determined by the gravity and dimensions of the conflict nucleus and by the capacity for compromise. The latter must exist not only in the patient but likewise in those members of his family who are real or symbolic threats to his emotional comfort, his sense of security, his initial desire for acceptability, his human yearning for recognition, and his desire for the satisfaction of his instinctual and acquired appetites.

Our experience indicates that neither longevity of symptomatology nor duration of time spent in hospital is a primary determinant in ultimate readjustment. Perhaps a period of genuine growth is required in which the patient absorbs and applies what he has gained from his hospitalization. Perhaps the period of growth must also witness the fortuitous alteration or elimination of one or more of the predisposing or precipitating factors of the illness.

Whatever may be the contributing factors,

the figures remain: of the 40 male patients diagnosed as psychopathic personalities, at the New York Hospital—Westchester Division between 1935 and 1940, 16—or 40 per cent—are known to have achieved an adequate conformity to society's demands. This would indicate that, for the less vicious and only moderately unbridled psychopathic personality, the traditional adherence to therapeutic nihilism and prognostic fatalism is unjustified. Therapy for the psychopathic personality—and for his family—remains a distinct challenge to the psychiatrist.

BIBLIOGRAPHY

1. Cheney, C. O. Outlines for psychiatric examinations. New York State Hospitals Press, 1934.

2. Maughs, Sidney. A concept of psychopathy and psychopathic personality: its evolution and historical development. J. Crim. Psychopathology, 2:4, April 1941.

LAW ENFORCEMENT ASPECTS OF THE DELINQUENCY PROBLEM [1]

EDMUND P. COFFEY

Federal Bureau of Investigation, Washington, D. C.

On a recent *March of Time* program, over a nation-wide radio hook-up, the editors said, "This week the nation's newspapers and police blotters were splashed with lurid ink about the generation just too young to fight and as the curve of juvenile delinquency rose to new alarming heights it was clear to many a United States citizen that a wartime crime wave was loose and sweeping the country."

I would like to quote in full the remarks Mr. J. Edgar Hoover made to the nation immediately following this *March of Time* announcement.

As a nation we have failed to realize the seriousness of the increase in youthful crimes since the outbreak of war. Here is a problem that is approaching a national scandal.

Last year, arrests of girls under 21 years of age increased 55 per cent. In the first three months of 1943, arrests of girls under 21 for crimes against common decency increased 93 per cent.

The age of the offenders is a tragedy that cannot be overlooked. Eighteen-year-olds led in the number of persons arrested last year. But the causes are not new—they are merely aggravated by the spirit of wartime abandon, general restlessness, a don't-care attitude, and changed conditions brought on by the war.

Consider the case of two youths, ages 15 and 17, who sought to wreck a fast passenger train. Their home existed in name only; they were left to shift for themselves.

In other cases, two nine-year-olds burned down a defense factory causing over a million dollars in damage. A sixteen-year-old boy pushed two younger boys over a cliff to their death. Practically every community in the land has been shocked by the revelation of tarnished lives of young girls.

Last year, young people under 21 accounted for 15 per cent of all arrests for murder, 50 per cent of all arrests for burglary, 34 per cent of all arrests for robbery and larceny.

Why, we should ask, does this condition exist? Many parents are working irregular hours and consequently neglect their children. The American home is not the place of learning that it once was. The overwhelming majority of youthful offenders come from homes that have been broken—where mothers and fathers have forgotten their obligations to their children.

Families by the hundreds have migrated to defense centers where there are inadequate housing and recreational facilities. Many young people with no appreciation of economic responsibility have left schools to take well-paying defense jobs. Seeking new thrills and excitement, they have been able to buy pleasures that are morally depressing.

Law enforcement is understaffed. Juvenile courts and probation officers are overworked. The constructive programs of youth-serving agencies have not been adequately supported. There is too much theory in crime prevention and not enough constructive effort.

The time has come when all Americans must lend their hands to preserving the home front. Our youths must be reared in an atmosphere of wholesomeness and their leisure time put to constructive use. The mothers, fathers and all adults must share the responsibility for the present rise of youthful crimes. Each must do his bit to prevent further increases and lend every aid to the rehabilitation of those who have strayed from the American way of law and order.

This morning I should like to explore with you the facts and basis for this somber statement which the Director of the Federal Bureau of Investigation so recently delivered to the public. By a study of the facts, we may come to the causes, and with a knowledge of the causes we can begin our fight for an improvement.

In 1942 there were 1,436,000 major crimes reported. As an indication of the extent of this crime we note that during an average day there were 31 felonious homicides, 27 rapes and 142 other felonious assaults, 129 robberies, 729 burglaries, 459 car thefts and 2,416 miscellaneous larcenies—a crime every 21 seconds on the average.

In further analyzing last year's record we find that crime against property decreased 5.8 per cent: burglary decreased 13.2 per cent; robbery dropped 9.6 per cent; larcenies were down 2.9 per cent; and car thefts 5.4 per cent less than previous years.

This was the first year of the war and its accompanying drastic upheavals in the normal social order. A sharp increase in the national income with the elimination of

[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association, Detroit, Michigan, May 10-13, 1943.

unemployment probably contributed much to what at first glance appears to be a gratifying decrease in crime.

But we have only seen half the picture. Instead of a gain in the war against crime, 1942 reflects the disturbed social and economic order of the war with an appalling and frightful picture of crime.

While crimes against property dropped, crimes against the person and juvenile delinquency increased in an alarming manner. Murder increased 1.6 per cent; highway robbery, 11.5 per cent; aggravated assault, 7.6 per cent; rape, 11 per cent.

Arrests of minor girls increased 55 per cent over the previous year and arrests of women of all ages was up 21.7 per cent. Thus minor girls charged with prostitution increased 64 per cent, and arrests of these minor girls under 21 years of age increased 104 per cent for sex offenses other than prostitution; 124 per cent for vagrancy; 69 per cent for disorderly conduct; and 40 per cent for drunkenness.

During the year young men under 21 arrested for assault increased 17.1 per cent, while youths under 21 arrested for rape increased 10.6 per cent; disorderly conduct, 26.2 per cent; and drunkenness, 30.3 per cent.

And so we see that wartime has truly brought us an acute crime problem, and particularly acute would appear to be the sex offenses of minor girls. Nor should we overlook the fact that this crime problem not only has its immediate serious implications, but that this juvenile delinquency born of the feverish activity of war and perhaps the reckless attitude inspired by war presents to us an even more serious long-range problem. Unless effectively controlled, the seeds of juvenile delinquency will germinate and flourish as a post-war crime wave of even more serious proportions. This possibility can be forecast as we visualize these reckless children maturing and mellowing in the environment and attitude of sex crime and a general disregard for law and order. When the inevitable economic readjustment begins after the war, these malcontents will easily become perennial outlaws rather than accept the discipline and economic sacrifices and adjustments which the postwar period may require.

I would like to cite two case histories.

The first, which concerns an attempt to wreck a train, will read like the records of accomplished and hardened criminals—until I come to the finale. The action takes place in a city in West Virginia. On November 15, 1942, about 4 o'clock on a Sunday afternoon, Earl met Freddy and they decided to break into some filling stations looking for money. About 9 o'clock that night they entered a filling station, broke into the money box of a telephone hanging on the wall and picked up 22 cents. They then broke into a store, taking cigarettes and gloves but no money. Finally, Freddy climbed into the window of another store about 1 or 2 o'clock on Monday morning and let Earl in the door. Here they obtained $14 or $15 and beating a hasty retreat slept in a neighboring car for the rest of the night. About noon on Monday, obsessed with the desire to travel, they took a bus to Catlettsburg, Kentucky. A certain man, age 46, of Zelda, Kentucky, happened to be in Catlettsburg on that day and saw the boys when they arrived. He knew the boy named Freddy and the three of them took a train for Zelda. There they had supper at his home and then the two boys left. Freddy later admitted that they had decided to rob someone and they planned to wreck a train and pick the pockets of the injured persons.

That night, November 16, 1942, at about 7 o'clock, they placed an angle iron weighing about 80 pounds in the frog of the railroad track owned by the C. & O. Railroad Company where the spur track joined the main track at Zelda. They intended to wreck train No. 39 which they thought passed through Zelda about 7:15 p. m. which carries the United States mail and interstate passengers. Students of the Zelda grade school, however, saw the subjects place the iron on the track and reported the act to the railroad police. They were apprehended shortly thereafter and in signed statements admitted their guilt.

The United States Attorney at Lexington, Kentucky, declined prosecution of Freddy and he was returned to his home town. The authorities there, even though he had participated in the robberies mentioned above, released him in the care of his parents who

stated that they intended to move to Columbus, Ohio. Earl had committed a previous offense of a similar nature and had been on probation. Accordingly, at this time he was sentenced by the county judge to the Greendale, Kentucky, Reformatory to remain there until he becomes 21 years of age. No Federal prosecution was instituted.

The boy named Earl was apparently the more vicious of the two. While being questioned by the special police at the C. & O. Railroad he became very angry and threatened to kill one of the Special Agents. A local officer stated he had never seen a more incorrigible boy and had never seen such an expression of rage and hatred on the face of any person. Persons interviewed stated that he was a very mean boy who liked to go to the movies and emulate what he had seen there. They stated that they did not think he needed any help in figuring out a crime because he was always planning escapades of this nature. While visiting at the home of a neighbor and his wife shortly before the crime in question, someone had said that he was a bad boy and he became very angry, cursed his grandfather and threatened to burn down the neighbor's home and a nearby schoolhouse. He went over to the schoolhouse and started tearing up things, breaking window lights and smashing the pumps. The neighbor and his wife had to stay up all night to watch him so that he did not burn down the buildings.

Earl admitted that for many years he had been in the habit of taking things that did not belong to him, for example, stealing articles from the five and ten cent stores and filling stations. In 1941 he had been sent to the detention home for stealing two dollars and had remained there for four months.

Neighborhood investigations revealed that Earl's mother had died approximately three years before the crime and that he had been reared by his father without a great deal of attention. At one time his father's home had been burned under peculiar circumstances and it was neighborhood talk that it had been the result of jealousy because of his living with another woman. Freddy's prior history was clear.

That is the case record. Now let me read the physical descriptions of the two subjects appended to the file.

Name, Earl .....; age, 10 years; height, 4 feet; weight, 75 pounds; hair, blond; eyes, blue; race, white; nationality, American.

Name, Freddy .....; age, 11 years; height, 4 feet 2 inches; weight, 74 pounds; build, medium; hair, blond; eyes, blue; complexion, fair; race, white; nationality, American.

Next is the case of a typical delinquent juvenile girl. One afternoon last fall a Ford club coupé was stolen from a parking lot in Denver, Colorado. A 16-year-old girl was subsequently apprehended and confessed the theft. On the day she stole the car she had received a letter from a former boy friend. He was then a fugitive from the Colorado Penitentiary and secretly wrote to her from Goodland, Kansas. He asked her to come to him and arranged a rendezvous on the highway in Kansas.

In the stolen car she drove alone that night to Colorado Springs and stayed at her sister's home for several days. Driving on into Kansas she picked up a man who bought her liquor and kept her company for several hours, after which she fell asleep in her car on the highway. Awaking she decided to drive over to Nebraska and visit a girl friend. In Nebraska she was arrested while attempting to sell the heater from the car in order to get gas and food. Convicted of the crime, she was sentenced to a girls' training school in Nebraska.

This 16-year-old girl was born in Kansas and much had been crowded into her young life. She attended school through the ninth grade. When 15, she married but left her husband after 5 months because his mother interfered in their affairs. After this she was arrested in Long Beach, California, for vagrancy, again in Urbana, Illinois, for investigation and a health check. Her baby died at the home of her sister in the summer of 1942. When arrested last she had not seen her parents in four months. She had one brother in the United States Army, two in the Colorado State Penitentiary, and two more, ages 1½ and 5 years, at home with the parents.

Reference is now made to the noticeable increase in highway robberies and aggravated assault. Into these general classifications police are reporting a new form of

attack which is spreading rapidly and viciously in our metropolitan centers during the last several years. This is known as "mugging" and sometimes as "yoking." Young roughnecks working singly or in groups of two or three conceal themselves and await innocent passers-by, usually at night. The attacker silently leaps upon the back of the victim from behind. He quickly throws his left forearm around the neck of the victim locking his hold with the right hand just over the larynx. This is a fatal strangle-hold with devastating possibilities. When one of these attackers has accomplices working with him, the strangler holds the victim while another goes through his pockets, and in this case the victim is usually left unconscious but alive. The victim is fortunate because when the crook has to work alone he will usually apply greater pressure in order to totally incapacitate the victim. Respiration is blocked, the blood vessels of the neck are compressed and the blood supply to the brain is seriously restricted. There is a rapid loss of consciousness and death frequently follows. This novel attack is apparently growing in popularity in the criminal world, principally because the victim is immediately silenced and usually never even gets a view of his attacker for later identification.

This is the picture of crime and juvenile delinquency which the Director of the Federal Bureau of Investigation had before him when he sounded the note of warning to the nation on the *March of Time* program. As a crime problem it will be met in many ways—by the aggressive attack of law enforcement agencies throughout the country in spite of their handicapped forces depleted by enlistment and drafts to our armed military services. It will be met by the courts, by our penal and reformatory institutions, and all the rest of the official governmental agencies whose duty is specialization in the prevention, detection, prosecution and repression of crime. But there is an equally important attack.

By constantly enlisting the intelligent aid of the entire nation we can build up a powerful respect for social conformity and a firm and uncompromising attitude toward lawlessness. In respect to the juvenile problem the greatest single thing we can do is to emphasize prevention and in so doing, the place of emphasis is in the home. The proper attitude on the part of the parent is absolutely essential. Perhaps some of the psychiatric attention devoted to the young offender would be better spent on his parents.

Home is the place for the fundamental training in righteousness and home is the place to nip in the bud those first inclinations to offshoot into reckless disregard of lawful authority. For the all-important foundation stone in life nothing has ever been able to equal the powerful influence of the proper home environment. The Nazis and the Fascists have institutionalized and, according to the best reports we can get, have produced a crop of Godless young fanatics who murder and mutilate the weak like wild dogs trained to blind attack.

Freedom of speech, freedom of worship, freedom from want and freedom from fear are philosophies taught beside the fireplace and learned by the young through the process of proud imitation of the ever upright examples of their elders.

IMMEDIATE AND FOLLOW UP RESULTS OF ELECTROSHOCK THERAPY[1]

LAUREN H. SMITH, M.D., DONALD W. HASTINGS, M.D., AND JOSEPH HUGHES, M.D.
Philadelphia, Pa.

Electroshock therapy(1) has been used for over two years at the Pennsylvania Hospital(2). During this time 279 patients have received treatment. Sixty-two had involutional melancholia, 125 were manic-depressive depressed, 30 were manic-depressive manic, 27 had schizophrenia, 20 were undiagnosed and 15 were psychoneurotic. The results of the treatment as well as the progress of these patients after their discharge from the hospital is the subject of this report. The term "recovered," as used in this paper, means a full remission of symptoms, the term "improved" signifies that the patient was well enough to be discharged from the hospital.

Method of Treatment

The patients were given shock therapy three times a week (every other day) by means of an alternating current of sufficient strength to produce a generalized convulsive seizure (250 milliamperes for 0.2 second). The shock was applied through electrodes placed on the fronto-temporal areas of the skull. A treatment course consisted in a patient experiencing from nine to ten convulsive seizures. Intocostrin (Squibb) given intravenously in a dosage of 0.5 mg. per pound of body weight was used to curarize patients in the second half of this series to minimize the fracture risk after Bennett's technique(3).

Each patient had a complete physical and neurological examination. Laboratory work included a urinalysis, complete blood count, lateral x-ray of the thoracic spine, electrocardiogram and electroencephalogram. Patients with coronary heart disease, active pulmonary lesions or marked osteo-arthritis of the spine were viewed as bad risks. The contraindications for shock therapy are a matter of opinion. It is felt that each patient should be considered individually balancing the advantages to be gained by a possible psychiatric recovery against the additional risks imposed by existing physical disease.

Results

Involutional Melancholia

Sixty-two patients, 24 men, 38 women, received treatment. The average age of onset of illness for the men was fifty-three years, for the women forty-nine years. These patients were ill approximately twenty-two months before treatment. All of them were agitated and depressed. Seven of the group had pronounced paranoid reactions.

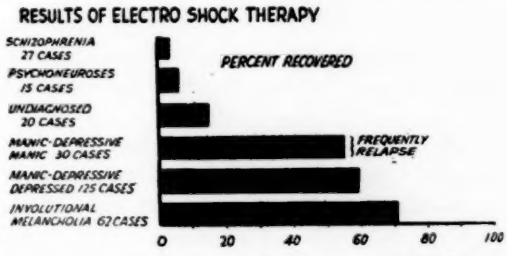


FIG. 1.—Recovery rate following electroshock therapy.

Forty-four patients recovered immediately (70%), 14 were improved (22%), 3 showed no change (8%) and one died (Fig. 1). Three months after treatment contact was lost with 9 of these patients limiting the follow up studies to 35. Of these 33 were still well, 2 had relapsed. Twenty-eight patients were followed for six months; of these, 26 were still well and 2 had relapsed. At the time of this writing 22 patients had been well for over a year (Table 1).

[1] Read at the ninety-eighth annual meeting of The American Psychiatric Society, Boston, Massachusetts, May, 18-21, 1942.

From the Pennsylvania Hospital for Mental and Nervous Diseases, Philadelphia, Pa.

Aided by grants from the John and Mary R. Markle Foundation and the Scottish Rite Fund for Research in Dementia Præcox.

In the group of 14 improved patients, 2 had gone on to complete recovery by the end of six months, 8 remained improved, 3 relapsed and contact was lost with one.

Manic-Depressive Depressed

One hundred twenty-five patients, 35 men and 90 women, were treated. Their ages ran from twenty to eighty years. Some had been ill only two weeks, the majority for eight to ten months, one for as long as eleven years. All but 29 had had previous psychotic episodes. Some patients in this group had more than the usual nine to ten convulsive reactions in their course of treatment. One had

TABLE 1

Follow-Up Results

No. pts.	Time	Recovered	Relapsed
	INVOLUTIONAL MELANCHOLIA		
35	3 months	33	2
28	6 months	26	2
22	12 months	22	0
	MANIC-DEPRESSIVE DEPRESSED		
52	3 months	48	4
45	6 months	43	2
39	12 months	35	4
	MANIC-DEPRESSIVE MANIC		
13	3 months	9	4
7	12 months	7	0

twenty-nine convulsions without any apparent untoward reaction. One patient recovered after a single treatment. Seventy-four patients (59%) recovered immediately, 35 were improved (28%), 16 were unimproved (13%). Fifty-two of the recovered patients were followed for three months. Forty-eight were well, 4 had relapsed. At the end of six months there were follow up studies on 45 patients, of these 43 were well, 2 had relapsed. At the end of a year 39 patients remained in the follow up study. Thirty-five had remained well, 4 had relapsed.

Of the thirty-five improved patients, 24 were available to the follow up study at the end of three months. Three of these had gone on to complete recovery, 12 were still improved, 9 had relapsed. Ten were available to the follow up study at the end of six months, 2 of these had recovered, 7 remained improved, one had relapsed. Of the 7 patients followed for a year 5 more recovered, 2 remained improved.

In the group of 16 patients who were unimproved by electroshock therapy a spontaneous clinical recovery occurred in 3 of these over the course of a year, another 3 progressed to an improved state, 8 remained unimproved. There were no follow up results on 2 of these patients.

Manic-Depressive Manic

Thirty patients, 8 men, 22 women, were treated. Their ages ran from twenty-two to fifty-nine years. Nine patients had no previous attacks. Seventeen (56%) showed an immediate recovery, 6 (20%) were improved, 7 (24%) were unimproved. Thirteen were followed for three months; 9 were still well, 4 had relapsed. Seven patients have remained well for more than a year.

Of the 6 improved patients, 2 had spontaneous clinical recoveries within a year, 2 relapsed. No information was available on the remaining 2. One spontaneous recovery occurred at the end of two months in the unimproved group of 7 patients.

Schizophrenia

Twenty-seven patients, 14 men and 13 women, were treated. They were from seventeen to forty-three years in age. Their symptoms ranged from two weeks to twenty-two years in duration, most of them had been ill for more than a year. Six patients out of this group of 27 were given electroshock in conjunction with insulin treatment. Out of the entire group of schizophrenic patients there was only one recovery (3%), 2 were improved (7%) and 24 were unimproved (90%).

Undiagnosed Psychoses

Twenty patients, 4 men, 16 women, were treated. Their ages ranged from thirteen to fifty-eight years. The duration of their illness varied from one month to ten years. Seven had histories of previous psychotic attacks. The symptoms of 15 patients out of this group of 20 strongly suggested schizo-

phrenia. Three of these 15 patients recovered, 2 were improved and 10 were unimproved. Five patients in this undiagnosed group showed an affective type of reaction. Of these 3 recovered, one was improved, one showed no change.

PSYCHONEUROSES

Fifteen psychoneurotic patients were treated. Their symptoms were of long duration. Their ages ranged from eighteen to fifty-seven. They received an average of five treatments. Seven of these patients were of the obsessive compulsive type, 7 had anxiety states, one had hysteria. One of the obsessive compulsive group recovered, 4 showed slight improvement, 2 were unimproved. None of the patients with anxiety states was helped with the exception that the shock treatments did relieve the depression in those patients who had this symptom accompanying their anxiety. No improvement was seen in the patient with hysteria.

Complications Resulting from Electroshock Therapy

The complications seen in 312 patients (33 of these patients have not been discussed in this paper because they had just finished treatment and were not included in the follow up study) consisted of fractures, dislocations, cardiac and respiratory complications, vasomotor collapse, spasticity, subconjunctival hemorrhages and memory defects. One death occurred.

Injuries to the skeletal system varying from slight compression fractures of the thoracic vertebrae to fractures of the humerus and disclocations of the shoulder occurred in six per cent of 198 patients who were manually restrained. In the group of 114 patients who were also curarized with intocostrin (Squibb) there have been no fractures. One patient in the curarized group dislocated his left shoulder, one died.

Three patients had cardiac complications. One aged sixty-seven, another aged seventy-four developed auricular fibrillation following the first electroshock treatment. Both of these patients responded to rest and quinidine. Another patient aged fifty-five suffered a coronary thrombosis after the fifth convulsion. None of these patients had any clinical or electrocardiographic evidence of heart disease prior to treatment. Electroshock treatment was stopped when these cardiac complications developed.

Prolonged apnœa developed in 5 patients during the course of their electroshock therapy. All were over fifty years of age. Respiration was reestablished by giving a stimulating dose of metrazol intramuscularly. Electroshock therapy was continued on these patients without any untoward results. The respiratory paralysis did not bear any clear cut relationship to the use of curare except in the one patient who received a toxic dose of this drug. Another pulmonary complication was lobar pneumonia which developed in a patient, aged fifty-five, during the course of therapy. One patient developed circulatory shock accompanied by hemoptysis immediately following a treatment. A chest x-ray disclosed a bilateral bronchiectasis. This patient recovered from this complication after being comatose for three days. No curare was used in this case. There was no improvement in this patient's psychosis. Another patient, aged twenty-nine, developed a vasomotor failure resembling surgical shock which lasted for thirty-six hours. Curare was used in this patient. Another patient, aged forty-two, developed a generalized spasticity following the ninth electroshock convulsion. This spasticity disappeared after three hours. Several patients developed subconjunctival hemorrhages. Electroshock treatment was always discontinued in the presence of severe complications.

All patients developed some degree of memory defect. This ranged from slight impairment of recent memory lasting a few hours to memory defect lasting as long as nine months. No permanent memory defects have been seen in this group of patients. Because of these memory defects it is felt essential to have the patient under medical and nursing supervision during the entire course of treatment. The memory defects increased with the number of treatments. In this group there is no apparent relationship between the age of the patient and the degree

of memory impairment. In the older patients, however, the memory changes continue for a longer time than in the younger patients.

One man, aged fifty, in this series of 312 patients died immediately following his first electroshock treatment. This patient had been partially curarized by intocostrin and had only a mild convulsive reaction. His respirations were satisfactory for the first two minutes following the convulsion but then became irregular and ceased, the heart sounds continued but disappeared within another three minutes. All efforts to stimulate respiration by means of prostigmine, oxygen and artificial respiration, failed. An autopsy was refused. This patient had no clinical evidence of previous pulmonary or cardiac complications. Just what rôle curarization had in this fatality is a matter of opinion.

Summary

Results of the follow up study of 279 patients who received electroshock therapy indicate that this treatment is very effective in the treatment of involutional melancholia and manic-depressive psychosis. The percentage of recoveries reported for this group is slightly less but comparable with that reported one year ago(2).

Manic patients do not hold their recovery as well as those who have an agitated depression. There is no evidence to indicate that electroshock treatments may prevent future psychotic attacks, nor that it might interfere with spontaneous clinical recovery.

Electroshock therapy is not effective in the treatment of schizophrenia. It is of doubtful value in the treatment of psychoneuroses.

Traumatic skeletal injuries may be decreased by the use of intocostrin (Squibb). Cardiac and pulmonary complications, vasomotor collapse, spasticity, subconjunctival hemorrhages may develop. Memory changes always occur to some degree during the course of treatment. These memory defects do not seem to be permanent.

BIBLIOGRAPHY

1. Cerletti, U., and Bini, L. Bull. Acad. Med. Rom., **64**: 36, May 1938.

2. Smith, L. H., Hughes, J., Hastings, D. W., and Alpers, B. J. Am. J. Psychiat., **98**: 558, Jan. 1942.

3. Bennett, A. E. Am. J. Psychiat., **97**: 1040, March 1941.

BORDERLINE CASES TREATED BY ELECTRIC SHOCK [1]

ABRAHAM MYERSON, M.D., BOSTON, MASS.

Shock therapies as no other form of treatment give immediately favorable results in the funtional psychoses and borderline states. There is a high percentage of immediately apparent improvement unparalleled in the history of psychiatry. Thus, within a fortnight, one sees the very depressed and suicidal patient become calm or even euphoric. The extremely agitated and restless individual becomes able to eat and sleep without recourse to tube-feeding and drugs. Even those who are hallucinated and deluded in a paranoid way have forgotten their false perceptions and beliefs. That relapses will come, that in many cases the psychosis remanifests itself as the brain recovers from its temporary injury is, unfortunately, true. But the airplane has flown even if shortly it has crashed. The defeatism of former days has disappeared for many workers in the field of psychiatry, and optimism in the treatment of the mental diseases for the first time has a valid basis.

I have selected for consideration a group of cases of borderline types. The term borderline is used to mean that most of them were either not committable because they never reached that stage of lost insight and irresponsible conduct which is the basis of commitment, or else no clear-cut diagnosis could be made as to type of mental disease. For me, the terms 'psychosis' and 'neurosis' are both unfortunate and without real meaning. Elsewhere I have described cases which started out as the so-called neuroses and drifted or shifted into what we call psychoses. This is a common experience, and in the life history of any individual he may in his first attack of mental disorder present the classical anxiety state or even a neurasthenic picture. In subsequent attacks his symptoms may become clearly those of an involutional melancholia or even a manic-depressive state, and the hypochondriacal type of neurosis certainly becomes a case of schizophrenia in many instances.

[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association, Detroit, Michigan, May 10-13, 1943.

These cases have been selected from office practice and in the main have been treated by the out-patient method. For the most part, they have been cases of long duration, by which is meant they have lasted a year or more without any change for the better and by the criteria of experience seem to have become fixed in their manifestations.

Three cases of fixed depressive ideas, possibly belonging to manic-depressive psychosis, are here presented.

CASE 1.—A female, 36 years of age, single, who for 1½ years had an obsessive idea of bodily and spiritual contamination which dated from an incident when a pet dog licked her genitalia just after she had taken a bath. There were no other psychotic symptoms. The patient was disabled both for work and the enjoyment of life. She was given three electric shock treatments in a period of 2 weeks, and this was followed by the complete disappearance of her symptoms. The patient has remained well during the one year that has followed the shock treatments.

CASE 2.—A female, 49 years of age, married, who developed the idea, after removal from one house to another, that everything in this house was all wrong; that she could not carry out in any satisfactory manner her household work as a result; that there was no possibility of ever being happy there when, as a matter of fact, the new house was definitely better than the old one. There were no other psychotic manifestations and even into this depressive idea she had some degree of insight. After one year of all kinds of drug and hormone therapy, she was given four electric shocks in one week. She returned to her household work and has remained well ever since. It is now over a year since she received the treatments.

CASE 3.—A female, 25 years of age, married, whose illness of 3 years' duration came on 5 months after her first baby was born, when she went into housekeeping for herself. There persisted a set of depressive fears which relate to her going crazy and which made it impossible for her to stay alone or to carry on her household work. In this case, as in the preceding one, anhedonic symptoms were very marked, but there was good insight. Prolonged hospital and other care was without effect. She was given five electric shocks and refused to take more. However, the fear of insanity has practically disappeared. She carries on her work fairly successfully. She is still moderately anhedonic, but she has shown marked improvement, to the point of social recovery.

CASE 4.—A depressive state relating to a real life situation: A female, 47 years of age reacted with

excessive agitation, emotional and social disorganization, which condition had persisted for over 3 years after the death of her husband. He had administered his affairs badly, and this was her constant theme, together with her reiteration of her distress and sense of lost security, with disturbance of sleep, rest and appetite for this long period. Institutional care, drugs, psychotherapy of a sort, and hormone therapy were unavailing. She received ten full convulsions over a period of 23 days and was "battered" nearly into a state of dementia. From this she gradually emerged, and there has been steady improvement in the mental state since that time. She has gone back to her work and now is engaged in attempting to straighten out her husband's affairs in a rational manner. She still mourns him, but there has been a social recovery which has been very gratifying.

In this case there was reality in the situation to which the patient reacted so disastrously. The depression might well be called a reactive depressive state. The harsh reality evoked a disorganizing and distorted emotional and mental life, but there was no actual falsification of reality in the shape of delusions.

CASE 5.—A case which has similarity to the preceding one although an actual psychosis developed is the following: Male, 49 years of age. There is a family history of much mental disease. Always overscrupulous, lacking sexual drive, virginal, he became engaged to a young woman, and during the course of the engagement endeavored to break it off, because he felt inadequate for marriage. The social pressure of church, fiancée and his family induced him to marry. Shortly thereafter, he developed a psychosis with many paresthesiæ and a deep sense of guilt symbolized by a struggle between God and the Devil for his soul, the guilt involving the act of marriage. This remained without improvement for several months and, in fact, was steadily getting worse. He received seven electric shocks within a period of 10 days. The delusions disappeared, he became socially organized and went back to his work. Nevertheless, he still regrets his marriage, believes it to have been a mistake which, in fact, it was, has endeavored to get his wife to see the matter as he does. She refuses to consent to a separation or an annulment, and they are still married and living together, although he is very unhappy over the situation. The unhappiness, however, is not at all delusional, nor does it interfere with his activities.

CASE 6.—A female, 50 years of age, married, who has always had an obsessive compulsive nature centering around ideas of sin and religious observance. She was ritualistic to an extreme but never disabled or sick as a result. After the death of her son in the Army, she developed a marked anxiety state in which obscene and anti-religious obsessive ideas developed, for which she felt impelled to compensate by excessive praying and the use of counteracting words and phrases. Despite drug therapies, the use of hormones, and the usual reassurance and crude psychotherapeutic procedures, she grew steadily worse. She always had insight into the situation but feared she was going insane. Three shocks were given her in her own home. She manifested a great fear of these treatments, and because of the fact that immediate improvement was noticed, that she slept without drugs, and that the obsessions and compulsive use of phrases and words had lessened, the shocks were discontinued and drugs, notably sodium amytal and amphetamine sulfate, were continued to be used. She has improved steadily during the 4 months that have elapsed since the last treatment, is socially adequate and carries on her household work efficiently. Her original obsessive compulsive reactions to religion have continued as a substratum of her life, but they are not disorganizing or notable.

There is a syndrome which I believe deserves a special place in psychiatry, which I call the anhedonic unreality syndrome. The term anhedonia refers to the fact that there is a complete disappearance of drive and desire in the main directions of life, namely, towards food, water, sex, work, social relationships, and there is a disappearance of the feeling of normal fatigue and the capacity to sleep. All affect, except the distress over the emotional loss, seems gone, and with this deficit there develops in the severer cases a feeling of unreality and of lost "meaning." Since people and things are valuable to us only as they evoke emotion of one type or another, the source of the unreality seems clearly to be the anhedonic state.

CASE 7.—A female, 25 years of age, single, had this syndrome for 4 years and had not changed in the slightest degree despite much treatment in various clinics and in the private practice of other psychiatrists. She received six electric shocks distributed over a period of 2 months, during which time her work was not interrupted. The unreality feeling disappeared early. The anhedonic phases became very much mitigated and finally disappeared. One and a half years after her last treatment, my notes state, "In general well, although not quite up to her normal in exuberance and hedonism, is working, active socially, and is practically well."

CASE 8.—A female, 43 years of age, single. Previous episodes with fatigue, depression, disturbed sleep and appetite, general incapacity to carry on at full speed. Six months before being seen, patient fell into an anhedonic unreality state of marked degree which remained unchanged despite other forms of treatment. Five electric shocks were given over a period of 10 days. Improvement was immediate. At the end of the first month following treatment she went back to work and has since remained at work steadily.

CASE 9.—A male, 52 years of age, married—a case in which anhedonia and unreality are mingled

with a hysteric reaction to the loss of an eye. Patient was ill for over 1½ years. Four shocks were given and a marked improvement was manifested, but within 3 months the hysteric manifestations involving the right side of his body and especially the right side of face and right eye, which almost passed into the state of being a somatic delusion, reappeared together with the anhedonic symptoms. he refused to take other shock treatment. Drugs, suggestion and other forms of psychotherapy were used, but he has remained without improvement.

Two other cases of anhedonic unreality syndrome, which had lasted for over a year, were treated successfully by a few shock treatments. That is, five shock treatments in each case produced a marked improvement and the patients have remained well over a prolonged period of time. The term 'well' is here used in a relative sense. A complete hedonism has not been attained. There is some degree of neurotic reaction to life and to various forms of experience. These are not happy individuals, but they have been able to go back to work and to maintain an outer and inner semblance of normality.

I do not believe the anhedonic unreality syndrome is a form of manic-depressive psychosis. There is never retardation, self-accusation or definite delusion-formation of any type as a rule, although occasionally one sees the evolution into somatic delusion, where the individual states he has no brain—his body is wooden or dead. Thus, the evolution is not towards self-accusation and the usual melancholy ideas. The development from anhedonia or no feeling towards the assertion—the organs are gone—seems a natural one. No manic phase succeeds the anhedonic unreality syndrome.

CASE 10.—A case of anorexia nervosa which by a shift of polarity became bulimia. For several years this female, 22 years of age, single, has been studied in various hospitals because of an extreme anorexia. For about 1½ years, however, she had shown bulimia, an insatiable desire for food, with a constant manipulation of her activities towards obtaining it either by stealth, stratagem or outright stealing. At all times there was insight into the fact that this eating was irrational and without useful purpose. The impulse, however, overcame the forebrain's activities in the direction inhibition. Seven shock treatments were given. The patient refused to take more and there has not been the slightest change in her bulimia.

Other cases might be cited where these borderline mental states have been treated by shock therapy without any lasting good results. In each of these cases there was temporary improvement, perhaps because in none of the cases was a large number of electric shock treatments given, this because the patient would not be hospitalized and a full course of treatments—from ten to twenty—could not be administered. However, my experience has been very definitely favorable. A large number of borderline cases in which there appear profound alteration in conduct, marked disturbance in mood, failure of energy, anhedonia, actual and severe depression, industrial and social incapacity, and which have not yielded in the least to other forms of therapy, including long periods of psychotherapy, have benefited markedly after a few electric shock treatments and without the necessity for hospitalization or undue expense to the patient.

As I have stated elsewhere, the mechanism of improvement and recovery seems to be to knock out the brain and reduce the higher activities, to impair the memory, and thus the newer acquisition of the mind, namely, the pathological state, is forgotten. As the brain recovers, the well established trends—those which are relatively normal—come back, but the incubus of more recent evolution and with less roots—so to speak—of thinking, feeling and doing, remains away. Where the disturbance is cannot even be guessed at with any degree of assurance. That there is no profound pathology in any of these cases is certain. That the physical therapy involved in the shock treatment is far superior to any psychotherapy or any other form of therapeutics, such as the use of drugs and hormone products, seems incontestable.

MODIFICATION OF THE ELECTROFIT[1]

1. Sodium Amytal

DAVID J. IMPASTATO, M.D., ROBERT BAK, M.D., JOHN FROSCH, M.D., AND S. BERNARD WORTIS, M.D.
New York, N. Y.

Von Meduna in 1933 introduced metrazol convulsive therapy. This new treatment proved very useful, especially in the affective disorders and was quickly adopted by psychiatrists. In 1939 Polatin and his co-workers shocked the medical profession by announcing a vertebral fracture rate of 43 per cent in a series of 51 cases. All Polatin's patients were X-rayed at the completion of their treatment irrespective of whether they complained of backache. This disturbing fact sent psychiatrists scurrying for methods to reduce or abolish such complications. Polatin in his original article recommended that the patient be held in strong anteroflexion during the convulsion. Hamsa and A. E. Bennett in 1939 advocated repeated spinal anesthesia. Both of these methods proved unsatisfactory. Subsequently B. T. Bennett and Fitzpatrick suggested the modified Bradford frame and manual restraint. In 1940, A. E. Bennett introduced curare, and Rosen, Cameron and Ziegler the synthetic beta-erythroidine hydrochloride; while Rankin, and Friedman and his co-workers used manual restraint and hyperextension of the thoracic spine, using either a pillow or foot segment of the Goetsch bed. In 1941 Yaskin recommended intravenous magnesium sulfate (25 cc. of a 25 per cent solution) and in 1942 Impastato and Almansi hinted that sodium amytal was applicable for the purpose.

Manual restraint and hyperextension have reduced the vertebral fracture rate to about 3 per cent. The curare group of drugs have prevented surgical complications almost entirely, however they have the following disadvantages: (1) The sensation of becoming paralyzed is disagreeable to the patient. (2) It causes prolonged apnea (in 50 per cent of the cases in one series). (3) Of about 5000 cases that have been reported in the literature we found 8 cases in which death could be ascribed directly or indirectly to the electrofit. Four of these 8 patients had received curare prior to the electric fit. Inasmuch as a small percentage of the 5000 cases received curare, the 4 curare deaths represent an unusually high mortality rate compared to non-curarized patients.

The use of intravenous magnesium sulfate is encouraging. It has apparently proved very successful in Yaskin's hands.

The electrofit, introduced by Cerletti and Bini in 1938, has since then almost completely displaced metrazol as a convulsive therapy. Although the incidence of fractures is lower with the electrofit, the problem of their prevention is the same as with metrazol.

The psychiatrist who administers convulsive therapy soon realizes that he has to deal with three problems:

1. The resistive and apprehensive patient who refuses treatment.

2. The prevention of spinal and other fractures.

3. The management of the post-convulsive excitement.

We have found that these three difficulties can all be overcome by administering intravenous sodium amytal just prior to the convulsion. It allays the fear and greatly reduces resistiveness in practically all patients; it reduces the severity of the convulsion or may even abolish the convulsion, thus minimizing the chances of fracture; and it completely abolishes the period of post-convulsive excitement in all patients. In addition to these obvious advantages sodium amytal can also be used as a prognostic tool. Furthermore, in usual practice without sodium amytal, a patient who has received electrofit therapy is removed from the treatment room before the next patient is brought in. Sodium

[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association, Detroit, Michigan, May 10-13, 1943.

From the Psychiatric Department of Bellevue Hospital and the New York University Medical College.

amytal makes this unnecessary as 3-4 patients can be treated before the first patient is removed. This is possible because the amytal patient is asleep after the treatment and is not disturbed by another patient undergoing treatment.

Sodium amytal (sodium amylethylbarbituric acid) is a barbiturate that acts for a moderate period of time. It is distributed equally throughout the brain, but appears to have a selective depressive action on the subcortical (hypothalamic) centers. In the cat it raises the sensory threshold to sensory stimulation of the cord. Moderate doses do not decrease the respiratory rate, the minute respiratory volume, however, is decreased. Ordinary doses have little effect on the cardio-vascular system. A sharp fall in the blood pressure may be caused by rapid intravenous injection, but the hypotension thus produced is transitory.

When injected intravenously sodium amytal remains in the circulation only a few minutes. It is eliminated by destruction in the liver and by excretion through the kidneys. Three to 8 per cent is eliminated by the kidneys, the rest is destroyed in the liver. In patients with liver damage it may cause poisoning. In patients with kidney damage it may cause oliguria. There is also danger of cumulative toxicity since 9 days are required for the drug to be fully excreted.

Death from therapeutic doses is unknown. Asthmatic and other allergic patients may show an idiosyncrasy to it. Some fatal skin reactions have occurred. Idiosyncrasy may be manifested by excitement, pain, vertigo, nausea, vomiting and delirium. It may also show itself by localized swellings about the face. Sodium amytal is contraindicated in liver and kidney damage, idiosyncrasy, fever, hyperthyroidism, diabetes mellitus, severe anemia and congestive heart failure. The antidotes are: caffeine sodium benzoate, 0.5 gm. intravenously, strychnine, 2-10 mg., intramuscularly every two hours, and ephedrine 10-30 mg. intramuscularly every two hours.

Procedure for the Use of Sodium Amytal (Intravenously) in Electroshock Treatment

At the first treatment the patient's convulsive threshold is determined in the usual manner without sodium amytal. On the second and subsequent treatments the patient is given 300 mgs. of freshly dissolved sodium amytal intravenously one to two minutes before giving the electrofit. This usually causes drowsiness and nystagmus. An occasional patient may fall asleep. If the patient falls asleep the dose is reduced on the next treatment. Two minutes from the end of the intravenous sodium amytal injection the electrofit is induced. We have arbitrarily chosen this two minute wait. During this interim we notice whether the patient becomes more responsive and if his productions lose their delusional or depressive content. Mood and insight are also evaluated. The closer these approach normal the better the prognosis as regards treatment.

Four common reactions are produced by the electrofit in a patient who has been given sodium amytal:

1. Petit mal. This is characterized by the usual flexion spasm, a fleeting apnea and definite amnesia. This reaction is due to insufficient dosage of electricity and is not desirable.

2. The modified grand mal. This consists of unconsciousness, the flexor spasm, an apnea lasting 30 or more seconds, rotation of the eyes, or the head and eyes to one side, dilatation of the pupils; isolated twitchings of the muscles of the face, very mild tonic contractures of the muscles of the limbs, and occasionally groping. There are no changes in the tendon reflexes and no pathological reflexes are produced. The entire reaction lasts 30 seconds or longer. This reaction is desired and has proved effective.

3. The delayed grand mal. This is the usual delayed grand mal in which after a primary apnea lasting from a few to 90 seconds the head and eyes rotate to one side, the mouth opens widely and the generalized tonic and clonic phases ensue. Because the delayed convulsion starts gradually the patient can be more easily and more completely restrained. This convulsion is less severe than the usual reaction and can be likened in severity to the convulsion resulting after the use of the curare. This reaction is also therapeutically desirable and effective.

4. The grand mal. This is the usual grand mal. When it occurs the fit is less severe than the seizure obtained without sodium amytal, but not as soft as the delayed grand mal.

It indicates that too much current has been used. Although it is therapeutically effective it should be avoided as there is danger of bone fracture.

Sodium amytal definitely increases the convulsive threshold and facilitates the production of what may be called borderline reactions such as the modified and delayed grand mal.

Results and Discussion

We have given about 200 sodium amytal injections to 20 patients. Of these 12 have completed their treatment. Of these 12 patients, 10 were suffering from depression and 2 were schizophrenics. Of the depressions, 5 recovered and 4 were much improved. The other had recovered at the end of the treatments but soon relapsed, and we have classified her as unimproved. One schizophrenic was much improved and the other improved. All the patients were studied roentgenographically before and at the conclusion of the treatments and none of them sustained any fractures (vertebræ or other bones).

The average number of treatments given were 13. Inasmuch as the majority of our patients were depressions they received more treatments than are usually required by patients not receiving amytal. This in our opinion is not a disadvantage as it affords the physician opportunity to administer psychotherapy during the latter part of the course of treatment.

Of the 10 patients that were recovered or much improved 3 had only modified reactions except for the initial grand mal, while one had only 2 grand mals, and another 4 grand mals. Thus there were 5 cases out of 10, or 50 per cent who either recovered or were much improved mainly with the modified reaction.

Undoubtedly these sodium amytal modified reactions will be called merely petit mal by some observers. In view of the fact that the petit mal reaction is generally believed to be ineffective our results must be considered unusually and unexpectedly good. We, however, believe that these modified reactions should be considered therapeutically equivalent to the grand mal reactions for in addition to having the characteristics described above, we use a convulsive electric dose not the sub-convulsive dosage used to elicit the petit mal reaction.

Electroencephalographic Findings

Electroencephalographic records made on several of our patients by Dr. Sidney Rubin seem to indicate that the electro-cortical activity is somewhat different from that which would follow afer a similar number of grand mal treatments without the use of sodium amytal. The electrical records appear to return to normal, with very little, if any evidence of residual slow activity. It is suggested that pre-convulsive intravenous injection of sodium amytal may buffer injurious cerebral tissue effects of electrical convulsions. Certainly the EEG. returns to normal more quickly after the use of sodium amytal.

Conclusions

1. Sodium amytal is effective in the management of the resistive and apprehensive patient, and the post convulsive excitement. It can be used to elicit prognostic productions. More patients can be treated during a given time period.

2. Our preliminary studies indicate that sodium amytal can lessen the severity of the ordinary convulsion or practically abolish it.

3. Our therapeutic results in a small group of patients are as good as those who have not received sodium amytal.

4. No fractures of the spine or other bones have been sustained by our patients.

5. Sodium amytal does not cause alarming apnea, nor does it have the other disadvantages of curare.

6. Our results warrant further use and investigation of the pre-convulsive intravenous use of sodium amytal.

ELECTROSHOCK

A Round Table Discussion [1]

Reported by HAROLD E. HIMWICH, M.D., Albany, N. Y.

Dr. Myerson.—Dr. Myerson, the moderator of the round table discussion, opened the meeting with the remark that shock therapies were now on the crest of the wave and though we are not sure what position they will finally occupy we do have enough experience with them to evaluate them. There seems to be no doubt that they are useful in certain conditions, in functional psychoses, and it is with these psychoses that psychotherapy has not produced brilliant results.

Dr. Kalinowsky.—Dr. Kalinowsky told of his results on two groups of patients, one a group of voluntarily admitted patients and the other of over 1000 state hospital patients. The therapeutic effect does not depend on strength of current but on a successful convulsion. For that reason if the electric shock does not produce convulsions a second electric shock is given immediately. In manics he has given as high as two or three convulsions in a single day, or two treatments a day, two days in a row. Dr. Kalinowsky believes that a state of coma is required for a successful treatment and compares hypoglycemic coma with the convulsive coma of electric shock treatment. In depressed patients eight treatments are usually adequate. In manics he frequently had to give over 20 convulsions and often two in one day. Even if there is a remission after three or four treatments he gives additional treatments to hold the gain. In the paranoid type of involutional psychosis he usually gives 20 treatments. The prognosis is less favorable in schizophrenia. Such a patient must have from 20 to 40 treatments. Schizophrenics with psychoneurotic symptoms have an unfavorable prognosis. If the effect of electric shock therapy is incomplete he gives additional insulin. Electric shock seems to be of no value in the organic psychoses. In epilepsy only the clouded states can be treated successfully by one or two electrically produced convulsions.

Dr. Kennedy.—Dr. Kennedy began his remarks by speaking of the one-ness of mind and body. He pointed out that only by an evolutionary accident do we have sense organs capable of perceiving man in one aspect of himself—that matter, when pursued to its essence, turns out to be energy and in our sense-experience, immaterial—that our health and personality balance is maintained by the unstable equilibrium normally maintained between the energy tension in the opposed accelerator system, the sympathetic, and our braking system, the parasympathetic system. He believed that the production of convulsion tended to correct the unbalance which had occurred in these systems through the hypothalamus. As regards technique of this treatment he had grown afraid of small voltages, and unafraid of voltages of doses of 150 volts given, if necessary, at five-second intervals, twice or even thrice. Therapeutic value seemed to reside in the production of major attacks and only slightly, or not at all, in the production of petit mal seizures. He believed the words "electro-shock," "electro-coma," and especially "electro-fit," poorly chosen and unnecessarily alarming to the patient and his family, in that instantaneous sleep is the only effect of which the patient is aware. He would suggest the words "electro-sleep," for this treatment.

The largest number of treatments which he had given to any one patient was 40. He believes that the same successful result could have been obtained in his earlier experience had he known then how to avoid the production of minor seizures. He had treated a patient with complete success who, after three years of agitated depression had a blood pressure of 260/130 and many retinal hemorrhages, and similarly a woman of 74 who, six months previously had had throm-

[1] Round Table at the ninety-ninth annual meeting of The American Psychiatric Association, May 10-13, 1943.

bosis of the posterior, inferior cerebellar artery.

In many thousand treatments, there had been no death; two almost asymptomatic dorsal vertebral body fractures had occurred, in both of these two cases treatments were continued to successful conclusions.

Dr. Kennedy believed that many obsessional neurotic symptoms emerged as the outward and visible signs of a manic-depressive constitution. Obsessional hand-washing, obsessional jealousy, and obsessional number-counting with some paranoid delusions had all disappeared in the course of treatment in some of his patients.

DR. MYERSON.—In commenting on the remarks of the previous two speakers Dr. Myerson noted that among the earliest signs of successful therapy there is the re-establishment of sleep and the break-up of the immobility of the face.

DR. BARRERA.—Dr. Barrera remarked that in medicine we do not wait for a scientific explanation if we have something of therapeutic value. But nevertheless for the shock therapy there is some previous experimental evidence. For example, Cerletti and Bini have shown in work on dogs that with huge doses, electric shock therapy produces irreversible changes but with dosages like those given to human subjects there are only slight and reversible changes. Other people have reported damage in cats and rabbits but they have given larger doses than the clinicians. Furthermore the people who reported damage used no controls. This is an important omission because it was found that changes observed in monkeys, who had received electric shocks, were also noted in the controls and therefore did not depend on the seizures. The same scientific criticisms apply to the cases of reported changes in human brain. Physiological alterations with therapy of the grand mal type cause electrical disturbances in the cortex. Slow potentials appear which do not parallel the clinical state of the patient. The electroencephalographic changes are reversible but they do not necessarily mean that the brain pathology if present is similarly reversible. A memory defect occurs but relearning is faster than originally. Chemically it has been shown that cholesterol, phospholipid and serum protein show great rises of about 25 per cent associated with individual seizures and that there is a slow return to normal or below during the following half day. These biochemical results are parallel and may be explained as a result of dehydration. The fluids leave the blood stream and the non-diffusible substances remain. Anoxia occurs. In the gastro-intestinal tract there is increased acidity and motility of the stomach, probably a vagus effect. Dr. Barrera had a patient with bundle-branch-block who received the therapy well. He gave it to one patient without reactivating tuberculosis. He also gave it to a patient with hypertension, and to a woman in the fourth month of pregnancy. A convulsive type of electroencephalograph is no contraindication to treatment.

DR. MYERSON.—In the treatment, you see that the newest things learned and developed disappear first. Dr. Myerson then read a short paper from Stanley Cobb, who had been asked to criticize the shock therapies. He pointed out that most of the papers written about electric shock therapy did not measure up to the scientific standards set by other disciplines in medical writing, because: (1) the diagnoses of the diseases treated were not clear cut and sure; (2) the courses of the diseases were not reliably predictable; (3) adequate controls have not been run; and (4) animal experimentation has been inadequate. Thus the evaluation relies on "clinical impression" too much to make most of the papers convincing.

In rebuttal, Dr. Myerson said it is true that the diagnosis is difficult but that depends upon the clinicians. The course is uncertain, but the patient may serve as his own control. For example, if he had previously suffered from a long period of depression and then subsequently on treatment has this period significantly shortened the doctor is left with the distinct impression of the usefulness of this treatment. Dr. Myerson characterized Dr. Cobb's paper as a counsel of perfection. He wants to know everything about a treatment before he trys it. But the literature contains other instances of the usefulness of a therapeutic procedure

before the mechanism was understood. Finally, Dr. Cobb himself has given no treatments.

Dr. Ziskind.—Subconvulsive reactions in therapy are not only useless, but harmful, even though followed shortly thereafter by a convulsion. The proof for this is to be found in the analysis of therapeutic results when cases are divided into two groups, those without a subconvulsive reaction and those with one or more such reactions. Our results, first reported in March, 1940, and again in a larger series last year, on affective psychoses treated with metrazol show a near 100 per cent response in the cases having no petit mal or subconvulsive reactions. Not only did the therapeutic failures occur in the group with petit mal reactions, but these were increasingly greater in proportion to the percentage of such reactions. Since verification of this finding has never been reported, I would like to urge other investigators to analyze their results in similar groups, if records of the subconvulsive reactions have been kept. If this finding is correct, then it has an important practical bearing on treatment and it becomes imperative to attempt to secure 100 per cent successful seizures without the occurrence of any petit mal reactions. Emphasis is placed on the statement that a single subconvulsive reaction, even if followed shortly by a second successful convulsive response, is still a deterrent to recovery. In our experience with the Offner apparatus a near 100 per cent success in inducing convulsions occurs when a high initial dose is used (500 m.a. for 0.3 second) and an increase is made in each subsequent dose if there is a latent period (10 m.a. for each second of latent period).

Dr. Cobb has asked for a controlled series. We have such a series for metrazol in the affective psychoses. Our controls are not alternate cases, but we have weighed them against the treated group and still get significant therapeutic results for the shock therapy.

Dr. Wilcox.—Dr. Wilcox said that instead of calling our field that of psychiatry it might be called scariatry because we are unable to make a diagnosis until the mental scars have set in. He is especially interested in the fact that by the electric shock therapy we can get patients well even before the mental patterns have become consistent with our diagnostic categories. His technique involves the use of the smallest possible current, namely 50 m.a. for about one second on the average. There is no retrograde amnesia and less confusion in his patients, but there is a tendency to more fear of the treatments. A further modification in technique is under way which removes this fear but retains the other advantages.

Dr. Karpman.—Granted that the treatment is effective within certain limits and the patient is restored to a former or near normal level, yet, since the treatment provides us with no insight into the nature of the sickness, there is no assurance that it may not recur. He feels therefore that this treatment should be used mainly as a softening process to pave the way for active psychotherapy where the patient would not be accessible otherwise.

Dr. Goldman.—Like Dr. Wilcox, Dr. Goldman thought that confusion is not desirable. He believes that the outlook is not always too good since 20 to 35 per cent of those who reach state hospitals with manic-depressive symptoms failed to improve. The results, however, were better in depressed people and in the aged. The earlier the beginning of the treatment the better the prognosis. He also remarked of the early re-establishment of the ability to sleep as a sign of improvement. Dr. Goldman gives the treatment despite hypertension and notes that the blood pressure returns towards normal if a cure occurs. He has observed temporary cardiac and respiratory arrest with no untoward results. He also noted bundle-branch-block in a patient previous to treatment without difficulty from the treatment.

Dr. Moriarty.—Dr. Moriarty said that the combination of convulsive therapy with psychotherapy yielded better results than psychotherapy alone, in treating the neuroses and the border-line psychoses.

DR. M. SOLOMON.—Dr. Solomon asked the question "How do shock therapies work?" The question is, at present, unanswered. He believes that the amnesia following the shock therapy is desirable. He reassures the patient that the amnesia is temporary, if the patient is concerned about it. He believes that in this electrical therapy the psychiatrist has a very important and valuable adjunct to his therapeutic armamentarium. He has observed splendid, in fact often remarkable results in depressed and agitated patients. The improvement is often unbelievable. It gives one increased confidence in handling such patients and their families. In fact it helps to improve and reorganize the morale of the psychiatrist in the handling of such patients. He has also used the treatment in schizophrenia.

DR. HIMWICH.—Dr. Himwich said that it would be well to make a review of our present knowledge to determine the trend of advancement. The moderator remarked that perhaps we are doing the right thing but in a very crude way just as if one were trying to right a watch with a hammer. If we could find out the essential step in the amelioration then it might be possible to accomplish it in a more direct and less brutal fashion. In the early 1920's Dr. Loevenhart used cyanide and observed remission in some cases. This is a dangerous procedure and cannot be universally used but it does show that a depression of brain metabolism may be important since cyanide inactivates the respiration of the brain. As we follow the appearance of the newer therapies, Sakel came along with insulin hypoglycemia. In this form of therapy the brain metabolism is also depressed. We know that the brain is unlike the other organs of the body and can use only carbohydrate. In hypoglycemia, the brain metabolism is therefore depressed. In the metrazol and electric shock therapies the respiratory movements are interfered with and the brain like all the other organs of the body is temporarily deprived of oxygen. Since all these therapies contain an element of depression of brain metabolism the treatment of the future will probably involve that feature.

SUMMARY.—Dr. Kalinowsky in his summary discussed complications chiefly. In 1500 patients he has observed two cases with fractures of the long bones of the body but has seen no fatalities.

In summing up Dr. Kennedy stated that he had never seen intellectual impairment after recovery from temporary memory defect in a certain number of patients. He cited a number of patients who, having recovered through this therapeutic instrument, were now successfully carrying out severely intellectual positions and tasks.

He referred to Dr. Cobb's request for "controls": he had had a number of patients whom he had cared for fifteen or twenty years ago through months and years of agitated depression who, having sustained another identical attack during the last three years, were treated successfully by "electro-sleep" recovering normal health thereby in as many weeks as previously they had been sick years.

Dr. Kennedy concluded by saying that we need a new orientation in the study of man. Up to the present we have been thinking only of the pathology of "fibre" but from now on we must begin the study of the pathology of "forces."

ELECTROENCEPHALOGRAMS IN POST-TRAUMATIC EPILEPSY[1]

Pre-Operative and Post-Operative Studies

HERBERT JASPER, Ph. D., and WILDER PENFIELD, M. D.
Montreal, Quebec

What is the characteristic of the electroencephalograms of patients who suffer from post-traumatic epilepsy? How often does this method accurately indicate the correct location of the focus of periodic discharge? What light does electrographic study throw on the nature of surgical procedures and is it of use in prognosis after operation? These are some of the questions which we intend to answer, even though it may be tentatively.

An electroencephalographic classification of the epilepsies was presented before this Association three years ago, in collaboration with Dr. Kershman(1). This classification was adopted from an analysis of about 500 cases of clinical epilepsy. It differs from the Gibbs-Lennox classification(2, 3) since it is based principally on the localization of minor interseizure discharges, or the localization of the area of onset of a major seizure. Wave forms are considered of minor significance. We are pleased to report at this time that this classification has now withstood application to over 2000 epileptic patients in the laboratories of the Montreal Neurological Institute with only minor modifications. It has also been found useful by other investigators(4). In the present study we have attempted its application to post-traumatic epilepsy.

In brief, electroencephalographic study of epileptic patients from scalp surface electrodes reveals two principal categories of electrographic disturbance occurring during periods between major clinical seizures. They may be either localized to a restricted area of the convexity of one hemisphere or not localized but involving large areas of both hemispheres simultaneously. The generalized disturbances may be divided into two groups, (1) bilaterally synchronous (*bisynchronous*) or (2) *diffuse*. Bisynchronous discharges appear simultaneously from homologous areas (bifrontal, bitemporal, biparietal or bioccipital). *Diffuse* discharges arise from widespread areas of both hemispheres but are not organized into a bisynchronous pattern. All records may then be classified as *localized, bisynchronous* or *diffuse*.[2]

Episodes or bursts of large amplitude waves are considered epileptiform regardless of their specific wave shape or pattern. Spikes, sharp waves and slow waves have been found characteristic of epileptiform discharges from superficial foci in the cortex on the convexity of the hemispheres. They are usually repeated in random sequence without fixed period or rhythmicity. Epileptiform discharges from deeper lying areas, either subcortical or on the inferior surface of frontal, temporal or occipital lobes tend to produce bisynchronous discharges as recorded from the scalp surface. These tend to be repeated in regular rhythms at definite frequencies, the most common being about 3 per second or about 6 per second. The outstanding pattern of bisynchronous discharge is the familiar wave and spike form commonly called "petit mal."

[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association joint session of the Section on Convulsive Disorders and the American Branch of the International League Against Epilepsy, Detroit, Mich., May 10-13, 1943.

From the Department of Neurology and Neurosurgery of McGill University and the Montreal Neurological Institute.

[2] This classification differs from the original classification of epilepsies by electroencephalography of Gibbs and Lennox, now commonly employed by many investigators(*e.g.*, 7), in that it is based entirely upon records obtained during minor, usually subclinical, attacks or upon the initial discharges before the clinical onset of a major seizure. Also since wave forms designated "petit mal," "grand mal," and "psychomotor" do not generally imply that a patient will have one of these three forms of clinical seizure as predicted from the EEG.(1, 4, 8) another basis for classification was adopted. Localization was chosen as a fundamental basis for classification because the form of clinical seizure seemed to depend more upon what part of the brain was primarily involved than it did upon the wave form or pattern of EEG. changes.

From previous studies it has been shown that the great majority of epileptic patients with well localized and discrete electrographic disturbances have local lesions of the brain which may be demonstrated either by pneumoencephalography or at operation(1, 5). The essential or cryptogenic epilepsies are found chiefly among those patients showing generalized diffuse or bisynchronous electroencephalograms. In the present study we shall attempt to show how the electroencephalogram may be of aid in the differential diagnosis of post-traumatic and essential epilepsy and how this method of examination may aid in the rational surgical approach to post-traumatic, as well as other forms, of focal epilepsy.

Methods and Case Material

Only patients without previous history of epilepsy who developed convulsive attacks following an injury to the head of sufficient severity to cause such sequelæ were analysed for this report. Most of the cases with injuries to the head at birth were excluded due to accompanying anoxia which might have complicated the ensuing damage to cerebral tissue. All cases were excluded in which there was reasonable doubt as to the etiological relationship between the head injury and the onset of epileptic seizures. They were selected from over 2000 cases of epilepsy examined in the electroencephalographic laboratories of the Montreal Neurological Institute during the past four years. Of this number only 86 cases (4.3 per cent) were presented by referring physicians as cases of post-traumatic epilepsy and were verified by careful analysis of the case history.

Since a somewhat higher percentage (7.5 per cent) has been reported by Lennox(6) as due to head injury, the histories of 500 unselected cases were analysed to obtain a more reliable percentage which seemed to follow severe head injury. There were 38 cases or 7.6 per cent in this group who developed epilepsy upon a clearly post-traumatic basis, a figure remarkably close to that cited by Lennox. The latent period between the head injury and the development of convulsive seizures varied between 1 month and 27 years in these cases, 46 per cent within the first year, 63 per cent within the first 3 years, 80 per cent within the first 5 years and 89 per cent within the first 10 years.

There were 32 cases, of the total 81 post-traumatic cases studied, who were subjected to brain surgery for the removal of a focus of epileptic discharge. Most of these cases were given more than one electroencephalographic examination before operation and at least one post-operative examination before discharge from the hospital. In some cases several post-operative examinations were carried out over a period of 1 to 2 years.

It should be emphasized that extensive electrographic localization studies were carried out on all patients examined by methods outlined elsewhere (5, Chapt. XIV). In some cases 45 minutes to 1 hour was necessary before a focus could be accurately mapped out on the head surface. Thirty minutes was a minimum recording time for these examinations. Most localized cases were re-examined at another time in order to verify the stability of a focus found on a given day. This was always done with those cases considered for surgical therapy.

Seizures With Acute Head Injury

Epileptiform seizures are a rare manifestation of acute head injury(9), and when they do appear they do not necessarily imply a prognosis of post-traumatic epilepsy. There were only 8 of the 83 cases of post-traumatic epilepsy who had seizures during the first 2 weeks following the injury. In one patient seizures developed within 30 minutes after injury, for 1 day, but did not recur again for 18 months. In another patient there was one seizure 3 days following injury, then none until 4 months later. The seizures which do occur during the acute stages are often of a generalized character, while those developing later are usually of focal origin. These facts suggest a somewhat different pathological basis for seizures as a manifestation of acute head injury as compared to that forming a basis for chronic post-traumatic epilepsy, although the fundamental nature of altered physiology may be similar in the two instances.

We have had the opportunity of electroencephalographic examination of only 2 cases of acute head injury with seizures at the

time of the examination. These cases were not included in the group reported here because neither of them has developed, as yet, post-traumatic epilepsy (in one case it is now 4 years since the injury). In one of these cases trepanation for possible subdural hemorrhage revealed multiple contusions of the cortex. She was having generalized convulsive seizures at the time of the EEG. examination. She was semi-comatose between attacks. A sample of her EEG. between and during seizures is shown in Fig. 1.

The replacement of normal rhythms by slow random delta waves during the period of depression between seizures in the above figure is the common electrographic picture of depressed cortical function. This picture is seen in practically all cases of acute severe head injury as well as in other conditions of impaired cortical function, such as with hypoglycemia, hypoxemia, cerebral edema, and even in normal sleep. The rapid spike-like waves represent heightened cortical excitation as manifest by the convulsive seizure which accompanies them if they attain a sufficient magnitude. The physiological state represented by these electrographic changes in acutely damaged cerebral tissue is probably one of metabolic deficiency associated with neuronal hyper-irritability. Fundamentally the same conditions seem to exist in damaged brain tissue, giving rise to post-traumatic epilepsy as judged by the electrographic changes to be described in the following sections.

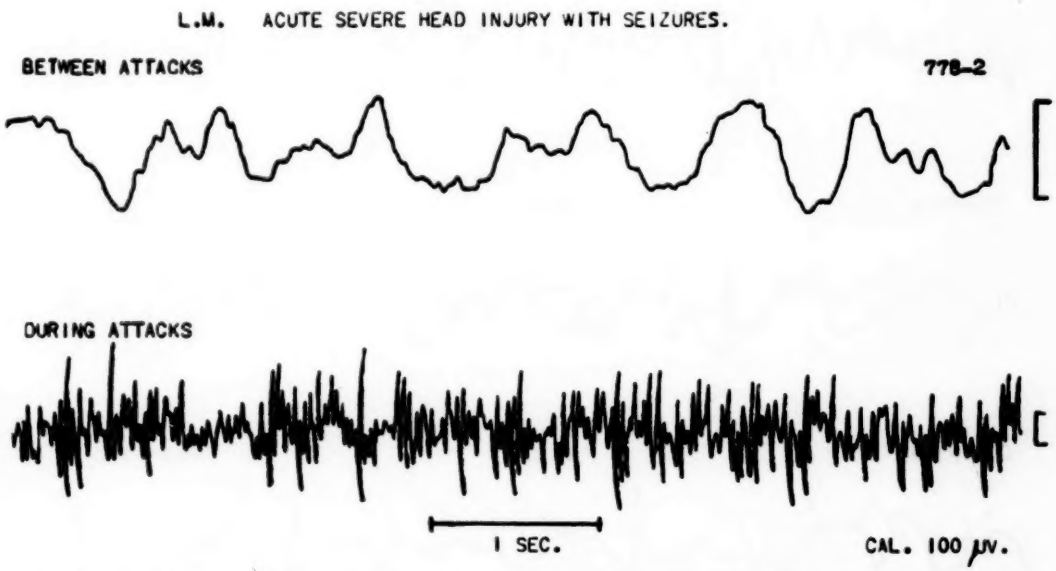


FIG. 1.—Electroencephalograms taken from two electrodes over the right parietal region 24 hours following severe head injury with multiple areas of contusion of the cortex. The patient was having repeated generalized seizures during which multiple spikes appeared continuously in the electrogram (lower line). Between attacks (upper line), continuous slow random delta waves were present and patient was semi-comatose.

TYPES OF ELECTROENCEPHALOGRAMS IN POST-TRAUMATIC EPILEPSY

In the great majority of cases (90 per cent) the electroencephalogram revealed a local area in one hemisphere from which random spikes or sharp waves were most prominent, usually upon a background of random delta waves. The spikes or slow waves usually appeared independent of the delta wave activity; a distinction between this type of activity and the regular wave and spike pattern of "petit mal." (There were a few exceptions in which a repeated wave and spike sequence appeared from a local area of one hemisphere, but sharp waves and spikes were present as well from the same region.) The spikes or sharp waves from superficial cortical areas in any region of the brain were of the same form, as shown

in the following examples taken from frontal, temporal, parietal and occipital regions (Figs. 2 and 3).

The persistent delta with occasional random spike or sharp wave as shown in the above figures suggests a similar physiological basis for these chronic focal epileptogenic lesions as noted above for acute traumatic lesions; namely, a condition of metabolic deficiency with associated neuronal hyperirritability.

In most of the localized cases (69 per cent) there was a single unilateral focus of spikes or sharp waves with a few (23 per cent) showing some low amplitude synchronous smoother waves from the homologous area of the contralateral hemisphere, apparently due to physiological conduction across interhemisphere commissural tracts. Lesions involving the temporal lobe, either penetrating beneath the surface or located on the inferior surface (probably from the second temporal convolution to the hippocampal gyrus) were most commonly associated with some evidence of conduction to the homologous region of the opposite hemisphere. An example is shown, in Fig. 4, from a case with spikes localized to the right ear electrode in pre-operative studies with a dense meningo-cerebral cicatrix on the inferior aspect of the temporal lobe found at operation, probably extending to the hippocampal gyrus. In this case the amount of contralateral transmission was relatively slight.

There were other cases (10 per cent) in which a major source of spike or sharp wave activity in one hemisphere would be associated with relatively large synchronous waves from the homologous regions of the contralateral hemisphere. They were sometimes repeated in regular sequence as for

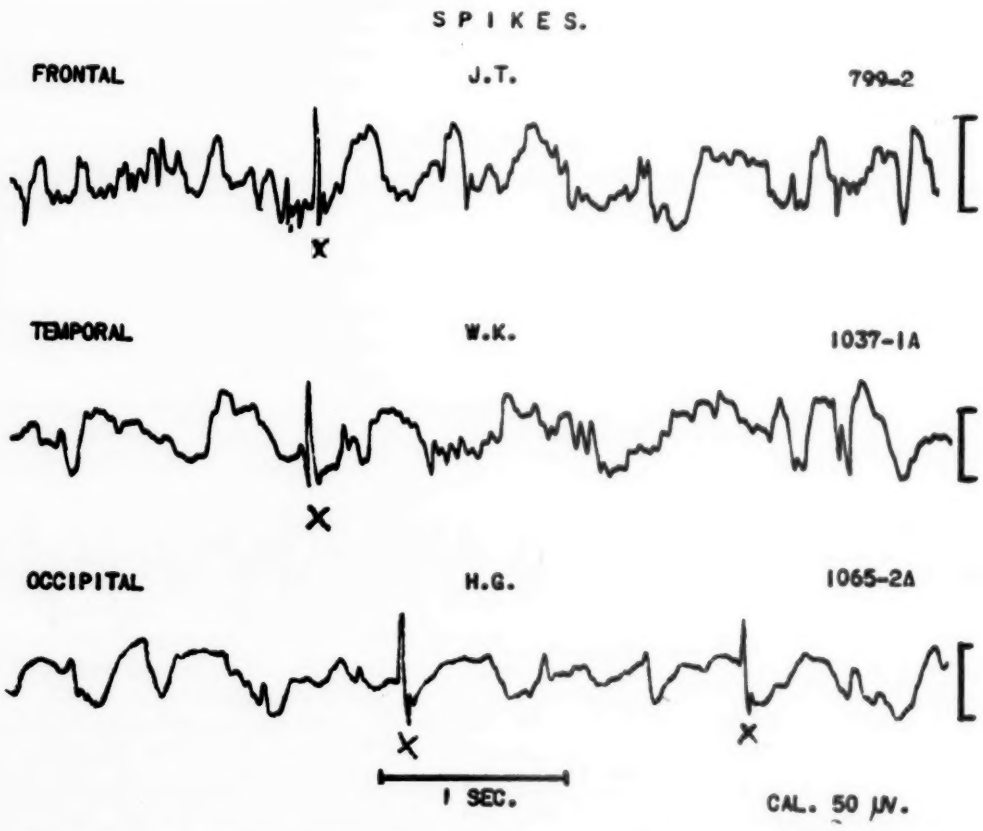


FIG. 2.—Sample electroencephalographic tracings from a local region on scalp over frontal area of damaged cortex giving rise to epileptiform discharges. These spikes are surface negative with reference to a distant "diffuse lead." All lesions were demonstrated at operation.

the true bisynchronous cases and at times it was difficult to make out which was the dominant side. Definite unilateral lesions have been found on the orbital surface of the frontal lobe in certain of these cases, as for the sample electrogram shown in Fig. 5.

Other complications to a simple single focus were found in patients with other cortical regions giving rise to continuous delta waves (8 per cent) and others who showed secondary spike or sharp wave foci, apparently unrelated to the major focus (13 per cent).

There were 9 cases, or 10 per cent of the total group of epileptic patients who had an apparent post-traumatic etiology, who showed no electroencephalographic evidence for a localized discharge from one hemisphere. In 3 of these there was a disorganized pattern of multiple spikes and sharp waves intermingled with normal rhythms from large areas of the two hemispheres, as though due to a large diffuse cortical lesion. In 3 other cases there were large amplitude bilaterally synchronous sharp waves and 2-4 per second rhythms, equal in amplitude and amount from the two hemispheres (bitemporal or bifrontal) and in 3 final cases there were episodes of typical bisynchronous (frontal) 3 per second wave and spike discharges indistinguishable from those thought characteristic of cryptogenic "petit mal" epilepsy. An example of this type of EEG. is shown in Fig. 6, with an abstract of the case history.

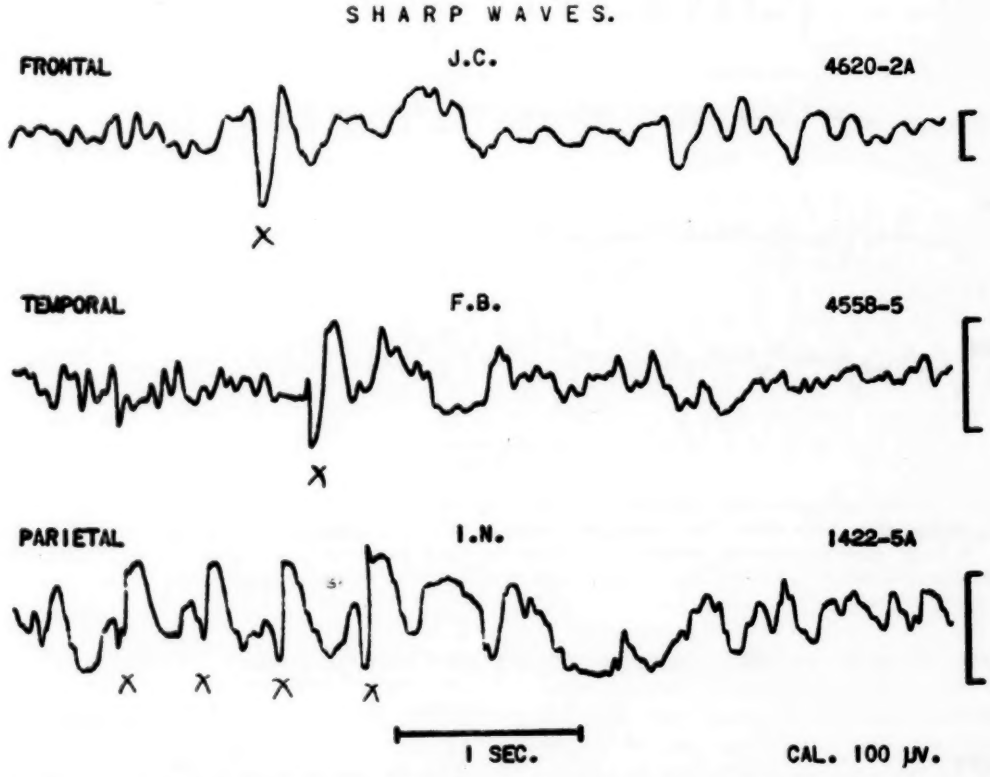


FIG. 3.—Sample electroencephalograms from local epileptogenic lesions giving rise to sharp waves. Focal atrophied lesions were demonstrated at operation.

M.B.—A normal appearing healthy boy of 15 years was admitted with the complaint of major generalized epileptic convulsions, beginning one year ago at the age of 14. Seizures occurred about twice a month and began with sudden loss of consciousness, falling, violent clonic movements of all extremities, with tongue biting and involuntary micturition. Consciousness was regained in about 15 minutes following a seizure. There was no history of petit mal attacks.

Family history was negative for epilepsy, migraine, asthma, or any nervous or mental disease. Birth was normal without instruments. Develop-

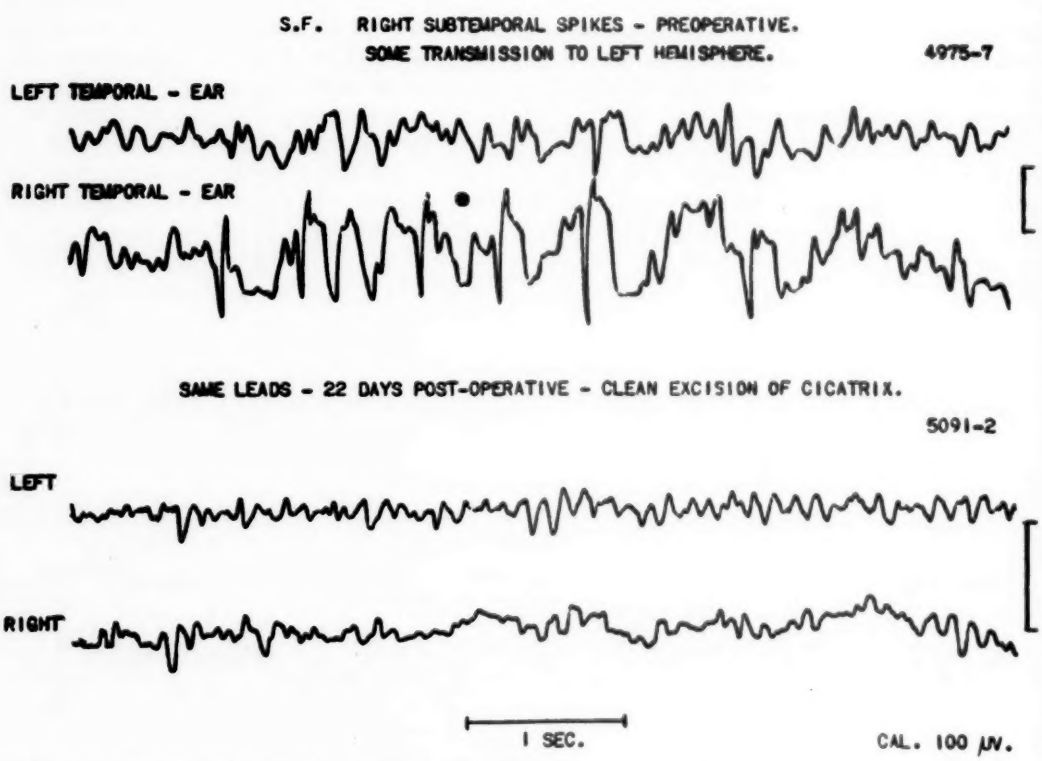


FIG. 4.—Pre-operative and post-operative electrograms recorded from the ear electrode to the temporal region on both sides. The spikes are down in this record indicating that the ear is the active lead. A large meningo-cerebral cicatrix, involving the third temporal convolution and the hippocampal gyrus was removed.

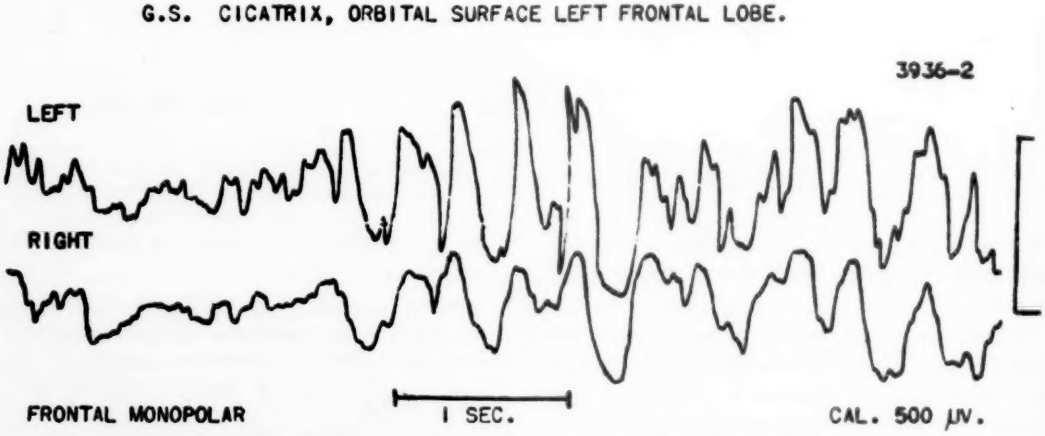


FIG. 5.—Electroencephalographic records from left and right frontal regions with the ear as a reference lead. Sharp waves appear of greatest amplitude from the left side, but are present also from the right. A meningo-cerebral cicatrix was removed from the orbital surface of the left frontal lobe.

ment was normal, with measles, mumps and whooping cough as a child.

At the age of 5 years the patient was struck by an automobile with fracture of the base of the skull and unconsciousness for 12 days. During the next few days he suffered some personality change and frequent headaches with dizziness, but no convulsive seizures until the age of 14, nine years following the injury.

X-ray examination revealed a skull fracture from a recent head injury suffered during a seizure. Pneumoencephalogram showed no definite focal lesion but diffuse enlargement of the ventricles and prominent subarachnoid markings, suggesting a "moderate diffuse atrophic process." (Dr. Childe.)

Numerous electroencephalographic examinations revealed only bisynchronous wave and spike epilepsy with sensitivity to hyper-ventilation and no evidence for a focal cortical lesion (sample Fig. 6).

Diagnosis.—Generalized grand mal epilepsy—possibly post-traumatic.

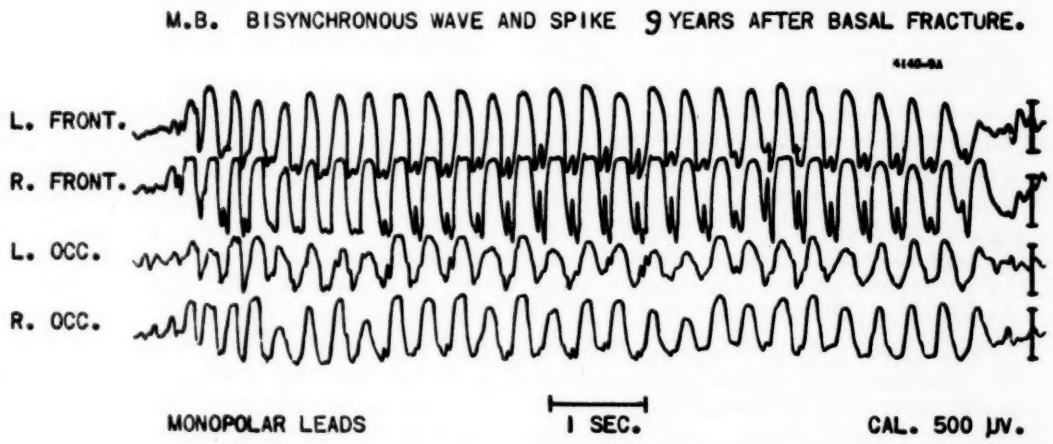


FIG. 6.—Sample electroencephalogram taken during short "petit mal" seizure. Case history is given in the text.

A summary of the distribution of electroencephalographic findings, together with some data on operated cases, in this group is presented in Table I.

THE EEG. AS A GUIDE TO SURGICAL THERAPY

The fundamental principle underlying the surgical approach to the treatment of focal post-traumatic epilepsy is that the border zone of a meningo-cerebral cicatrix contains nervous tissue which is hyper-irritable, possibly due to chronic impairment of blood supply(10). The electrogram lends support to this conception by the recording of spikes and sharp waves from these focal areas of the brain, which are indistinguishable from the waves that may be produced experimentally in animals by the local application of strychnine to a small area of the cortex(11, 12). That these waves represent real nervous excitatory processes is revealed by the fact that they are accompanied by bursts of nerve impulses in pyramidal tracts which may result in clonic twitching movements of muscles(13).

By analogy with the strychninized cortex this hypersensitive tissue gives exaggerated responses to nerve impulses, reaching it from afferent pathways as well as responding in an apparently "spontaneous" manner. Either due to a periodic increase in the sensitivity of this tissue or due to a sudden increase in the excitatory impulses playing upon it, it will, upon occasion, set up a focal discharge of such magnitude that surrounding or functionally related healthy nerve tissue is affected, resulting in the familiar "march" of the epileptic seizure.

The electrographic sign of the chronic hyper-irritability is seen in the almost constant presence of random spikes or sharp waves from focal epileptogenic cerebral tissue. If one is sufficiently fortunate to be recording at the time, it is possible also to see in the electrogram the sporadic local firing of an epileptogenic focus increase the intensity of its activity until a continuous shower of very large spikes marks the onset of a clinical seizure, which may spread to include more or less of the whole cortex.

The importance of these observations for the surgical approach to this diseased tissue is that one has no longer to depend solely upon the careful observation of the onset of a clinical seizure or upon roentgenographic evidence for a precise localization of an active epileptogenic focus. Electrograms taken from the exposed brain at operation add further to precision of localization before excision is carried out. Finally, post-operative electrographic study may reveal the success with which the original focus has been removed by the amount of spike or sharp wave activity remaining at the site. The persistence of delta activity in the vicinity of the excision may give some indication of the amount of damaged brain left behind, which may eventually develop a new focus of epileptic discharge.

The frequent observation of slow waves (delta) in addition to spikes and sharp waves from an epileptogenic lesion lends support to the conception that a metabolic deficiency is present with hyper-irritability. Initial hyper-irritability and, perhaps more important, hypersynchrony, or the tendency for large areas of the cortex to discharge in unison, has been observed by Sugar and Gerard (14) as a result of cerebral ischemia in the cat.

Slow waves alone are not a reliable guide to an epileptogenic lesion. In the absence of other electrographic findings a so-called "delta focus" in an epileptic patient gives presumptive evidence that the lesion responsible for the epileptic discharge may be in this general location. Positive evidence is obtained only when spikes or sharp waves are repeatedly recorded from the same discrete area.

There were 32 patients (42 per cent) of the 77 with localized EEG. findings who were operated upon in the attempt to remove a focal epileptogenic lesion. Dr. Penfield performed most of the operations. Reasons for not attempting operation on the remaining 54 per cent included, (1) lack of correspondence between localization by EEG., pneumoencephalogram and pattern of clinical seizure, (2) EEG. and/or pneumo-

TABLE I

DISTRIBUTION OF TYPES OF ELECTROENCEPHALOGRAM IN POST-TRAUMATIC EPILEPSY—86 CASES

	No.	%	% operations	% improved or cured
Localized (simple):				
A Single restricted unilateral focus of spikes and/or sharp waves with delta	35	46	51	64
B Single spike or sharp wave focus with some low amplitude contralateral transmission	18	23	33	80
A plus B	53	69	42	71
Localized (complicated):				
C Major unilateral spike or sharp wave focus with prominent bilateral synchrony in rhythmic waves	8	10	13	00
D Unilateral spike or sharp wave focus with delta elsewhere	6	8	50	33
E One major spike or sharp wave focus with other independent minor spike or sharp wave foci	10	13	70	29
C plus D plus E	24	31	46	27
Total localized cases	77	90	42	59
Generalized:				
A Diffuse disordered multiple spike or sharp wave activity	3	33	..	..
B Bilaterally synchronous sharp waves and 2-4 per second paroxysmal slow waves	3	33	.	..
C Bilaterally synchronous 3/sec. wave and spike, "petit mal."	3	33	..	..
Total generalized cases	9	10		

encephalographic evidence for multiple foci or lesions, (3) successful medical therapy, (4) lack of cooperation of patient, either because of age or personality, and (5) patient's or parents' refusal of operation.

Definite objective lesions of the cortex were found in 30 (94 per cent) of the 32 operated cases and excisions carried out in 29 cases. All of these lesions were located with reasonable accuracy in the pre-operative EEG., including 2 found on the orbital surface of the frontal lobe and 1 found on the inferior surface of the occipital lobe. In both of the two negative explorations the pre-operative electrographic localizations were indefinite, suggesting either a diffuse lesion or a deep lesion of the temporal lobe. Meningeal adhesions were found but no actual lesion of the cortical surface was obvious. In a third case atrophied cortex was found but considered too extensive and not clearly enough related to the type of seizures to justify removal.

Satisfactory follow-up studies were possible on only 25 of the 29 cases with cortical excision. Eight of these cases (32 per cent) have had no seizures since operation, during periods varying between 1 and 4 years. There were 8 who showed marked improvement, with only one to a few seizures since operation—and some of these under extenuating circumstances. This represents a total of 64 per cent of the operated cases, with excision, who were either greatly improved or apparently cured. This figure is comparable to that cited by Penfield and Erickson (p. 292) for a larger number of cases.

One might assume that the EEG. might be of use in selecting cases most favorable for surgical therapy and in measuring results in post-operative electrograms which might be of use in prognosis. It is well established that acutely damaged cerebral tissue gives rise to delta waves so that the persistence of delta activity in post-operative records might give some indication of the amount of remaining cortex left in a damaged condition—and possibly forming a foundation for the development of an epileptogenic lesion. The persistence of the same spike focus in immediate post-operative electrograms should indicate failure to remove the epileptogenic focus, while the late development of a spike focus might indicate a new focus developing on the border of the previous excision. Examination of pre-operative and post-operative electrograms from patients included in this study sheds some light on the degree to which these expectations may be realized.

Those patients showing the best post-operative course and no clinical seizures following excision of cerebral tissue by suction, leaving banks of the surrounding cortex covered by pia, according to the technique described by Penfield(5), show some slow wave activity over the area of exposed cortex during the first 1 to 2 weeks following the operation but very little delta after 3 weeks and even less when examined 1 month post-operative. There is no return of sharp waves or spikes in these cases—as shown in the following two examples (Figs. 7 and 8).

Each of the 8 patients who have had no seizures since operation had a clear uncomplicated spike or sharp wave focus in pre-operative electrograms. None of these patients showed the same large amplitude local spikes or sharp waves in post-operative electrograms. Five showed no evidence of sharp wave or spike activity and extremely little delta in electrograms taken 20 to 30 days after operation. Three patients showed a trace of low amplitude sharp wave or spike activity on the border of the excision 17 to 30 days post-operative, but none of the large clear epileptiform discharges of pre-operative records. Two of these cases have had occasional aura since operation but no convulsive seizures.

The patients who showed marked improvement, with only rare seizures, usually of a less severe character following operation, all showed persistent abnormality in the electrogram taken just before discharge, about 30 days post-operative. In 4 out of 6 cases there was large persistent delta activity on the border of the excision in immediate post-operative records to 30 days, followed by a return of a spike or sharp wave focus within a few months. This second focus was quite different in localization and much less active than the original focus present before operation. Post-operative electrograms showed marked abnormality as well in the remaining two cases; one with persistent large amplitude 3/second bifrontal slow waves occur-

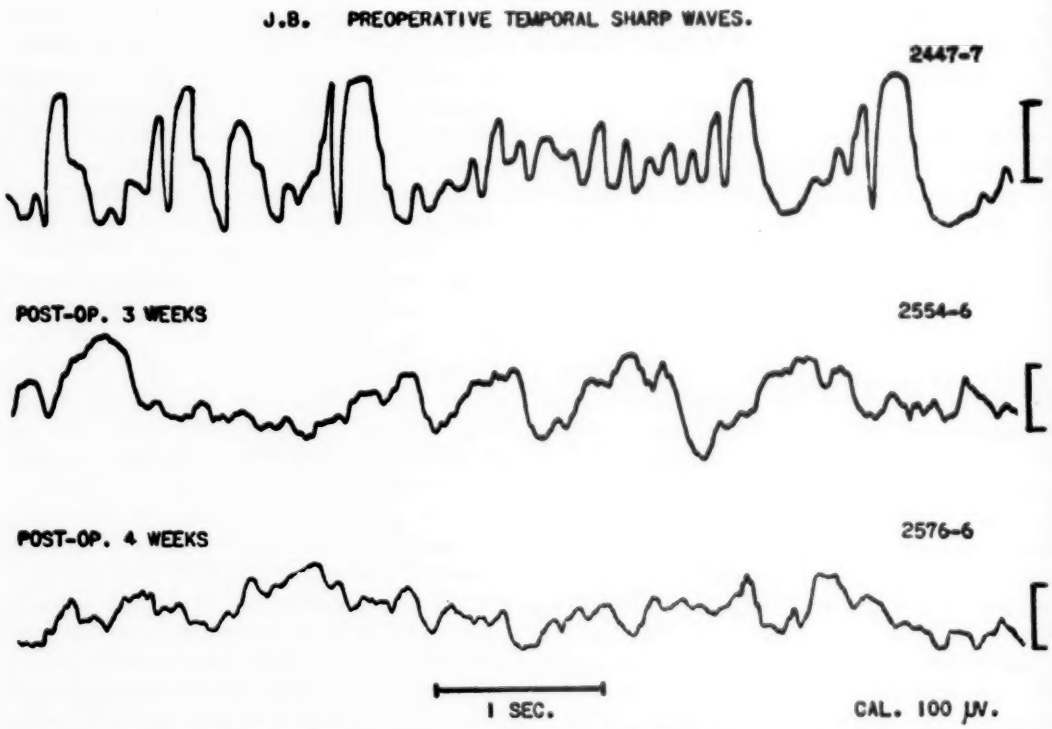


FIG. 7.—Pre-operative and post-operative electroencephalograms from the right temporal region showing sharp waves pre-operative (upper line) and delta waves in post-operative electrograms diminishing in amplitude. A meningo-cerebral cicatrix with atrophied cortex was removed at operation.

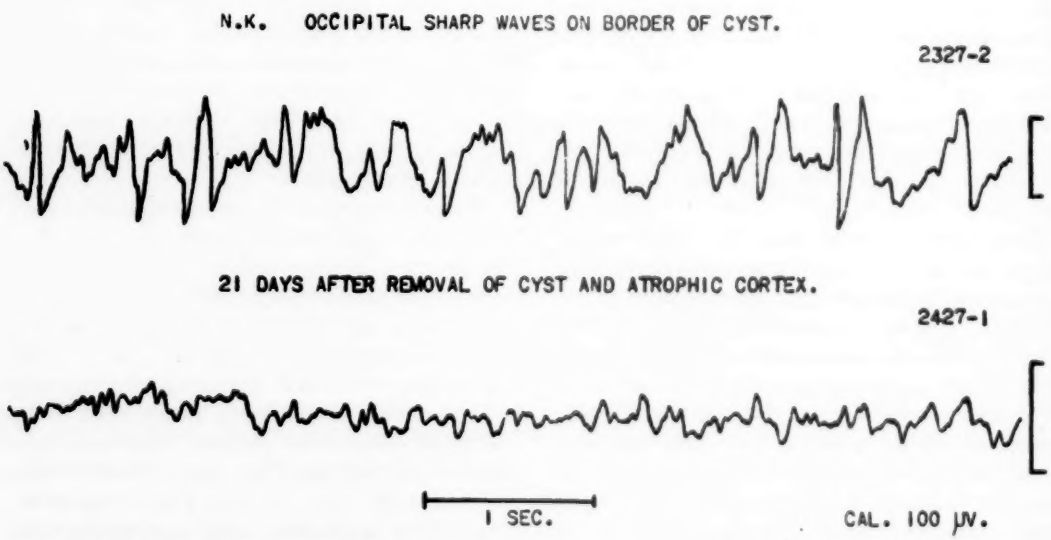


FIG. 8.—Pre-operative and post-operative electroencephalograms showing sharp waves from the border of a cyst in the left occipital region (upper line). The cyst with adjacent atrophied cortex was removed at operation with consequent disappearance of sharp waves and freedom from clinical seizures.

ring in episodes and the other with some sharp wave activity appearing 33 days post-operative and increased in amount 5 months later, but later reduced with medication.

It is of some significance that those patients with the most clear and uncomplicated electrographic localization from pre-operative studies (A and B, Table I) had a more favorable post-operative course (71 per cent improved or cured) than those with complicated or less definite electrographic localization. The EEG. may be of value, therefore, in the selection of cases most favorable for surgical therapy.

The significance of the EEG. in prognosis is less definite. It cannot be depended upon to predict, in many instances, the developmental course of a potentially epileptogenic lesion of the brain. Most electrographic observations are based upon minor "sub-clinical" epileptiform disturbances, the patient being free of major clinical attacks during the time the records are being taken. An active spike focus seen only in the electrogram is only presumptive evidence that this focus may increase its activity, upon occasion, to such an extent as to cause a major convulsive episode. The occurrence of such episodes depends upon a variety of factors, among which are indiscretions of diet or the continuation of medication. For example, one patient developed a moderately active spike focus following operation, but has had only one post-operative seizure. It followed the forcing of fluids for a genito-urinary infection. Subsequent electrographic study, during the past 3 years, has been shown a progressive diminution of spike activity and the patient has now been free of attacks for over one year without medication. It is true that a progressive increase in the activity of a spike focus is more frequently seen, but those patients with regressive lesions seldom present themselves for electrographic study.

Differential Diagnosis of Post-Traumatic and Essential Epilepsy

The fact that in 90 per cent of the cases of post-traumatic epilepsy reviewed in this study presented some electrographic evidence for a predominantly unilateral source of epileptiform discharge makes it somewhat questionable whether the diffuse or bisynchronous disorders are truly of post-traumatic etiology. Heppenstall and Hill(19) concluded, from a study of 150 patients with post-traumatic syndromes, that focal abnormalities in the EEG. are associated with acquired cerebral trauma while generalized diffuse abnormalities are associated with constitutional deficiencies and do not necessarily indicate the presence of cerebral damage. Gibbs(20) found a much higher percentage of focal abnormalities in patients with post-traumatic epilepsy as compared to patients with essential or idiopathic epilepsy. It appears therefore that, in general, localized EEG. abnormality, especially if of the spike or sharp wave form, is a definite aid in the differential diagnosis of post-traumatic epilepsy. This is contrary to the conclusion of Williams(21) who failed to find any distinguishing features in the EEG. of post-traumatic epileptic patients.

Diffuse and particularly bisynchronous epilepsies are most commonly found in patients considered idiopathic or cryptogenic, frequently with an hereditary background for their seizures(1, 15). They also seem most clearly related to a fundamental metabolic disorder revealed in studies of blood chemistry(16, 17, 18). Although the 9 patients with only generalized EEG. disturbances included in this study had severe head injuries preceding the onset of clinical seizures, all injuries occurred before the age of 14 years, and 7 suffered injuries before the age of 7 years. These injuries may well have been incidental to the appearance of an essential epilepsy, though this is difficult to prove. Electroencephalographic study of the parents and near relatives would be of great interest, but such studies have not as yet been made for these patients. Children with petit mal epilepsy frequently have head injuries as a result, rather than as a cause of seizures.

It is conceivable that an injury to the base of the brain might create a source of epileptiform discharge which might serve as a central pacemaker for bilaterally synchronous discharges in the two hemispheres, and it might even be of the classical wave and spike form, though no such lesion has yet been demonstrated. Also large areas of contused cortex might result in an EEG. picture of diffuse epileptiform disorder but this

also has yet to be proven. Until such post-traumatic lesions have been shown to be present in cases with these EEG. findings, one may assume that the probabilities are greatest that they are essential rather than post-traumatic epilepsy. Certainly the patients with diffuse or bisynchronous electrograms may well be considered as having essential epilepsy from the point of view of the neurosurgeon.

Summary and Conclusions

Electroencephalograms of 86 cases of post-traumatic epilepsy were analysed with particular reference to the localization of abnormal electrical discharge. Pre-operative and post-operative studies were made on 32 of these patients on whom operation had been carried out for the surgical removal of an epileptogenic lesion.

1. Definite electrographic evidence for localization of major epileptiform discharge to a relatively restricted area of one hemisphere was obtained in 90 per cent of the cases. A relatively superficial focus was found in one area without significant complication by abnormality elsewhere in 69 per cent of the cases.

2. A combination of random slow waves with random spikes or sharp waves was found to be characteristic of superficial cortical epileptogenic lesions of the cerebral cortex. This is interpreted as representing a local condition of metabolic disturbance, a product of which causes neuronal hyperirritability. These two types of electrographic abnormality are also observed in patients with convulsive seizures which follow shortly after acute head injury.

3. Generalized electrographic disturbances were present without unilateral localization in 10 per cent of the cases. Three of these patients showed a diffuse multiple spike and sharp wave disorder with relatively continuous dysrhythmia of a type suggesting a diffuse lesion of the cortex.

4. Prominent equilateral bisynchronous discharge was found in 6 cases, in three of which there was found the typical wave and spike form of record commonly considered to be characteristic of "petit mal" cryptogenic epilepsy. There are two possible explanations of these cases. Either they are cases of essential epilepsy in which head injury is only incidental to the development of seizures, or the accident produced a lesion at the base of the brain which might be serving as a pacemaker for bilaterally synchronous epileptiform discharge of the two hemispheres. Positive evidence for such a lesion is lacking.

5. Pre-operative electrographic study provided a reasonably accurate guide to the border zone of an objective lesion of the brain in 94 per cent of the cases in which operation was performed. There was evidence of some former brain injury in the region of electrographic localization in all of these cases.

6. Complete freedom from seizures or very rare minor attacks resulted from surgical excision of epileptogenic lesions in 71 per cent of those cases with clear uncomplicated pre-operative spike or sharp wave foci. The percentage of success was less than half this amount in patients whose pre-operative EEG. showed more than one spike focus, other areas of delta waves, or prominent bisynchronous activity.

7. From the point of view of surgical therapy, the electroencephalogram provides strong evidence that the technique of excision which we have used in the past few years is satisfactory. The essential feature of this technique is that gyri should be completely, not partially, removed, and the pial covering of remaining gyri be preserved. The white matter thus left exposed does not seem to give rise to abnormal electrographic record. One month after such a removal, spike and sharp wave activity is not present and there is very little delta activity. These cases show the most favorable clinical course.

Persistence of large delta activity or return of large spike or sharp wave activity usually indicates a bad post-operative prognosis. The EEG. cannot be depended upon, however, to predict the developmental course of a potentially epileptogenic lesion of the brain, since regressive as well as progressive lesions are encountered.

BIBLIOGRAPHY

1. Jasper, H. H., and Kershman, J. Electroencephalographic classification of the epilepsies. Arch. Neurol. and Psychiat., 45: 903-943, 1941.

2. Gibbs, F. A., Gibbs, E. L., and Lennox, W. G.

Paroxysmal cerebral dysrhythmia. Brain, **60**: 377-388, 1937.

3. Gibbs, F. A., Gibbs, E. L., and Lennox, W. G. Cerebral dysrhythmias of epilepsy. Arch. Neurol. and Psychiat., **39**: 298-314, 1938.

4. Echlin, F. A. The electroencephalogram in epilepsy. New York Neurol. Soc. Proc., 1942, Arch. Neurol. and Psychiat., **49**: 296-299, 1943.

5. Penfield, W. G., and Erickson, T. Epilepsy and cerebral localization. Springfield, Charles Thomas, 1941.

6. Lennox, W. G. Science and seizures. New York, Harper and Bros., 1941.

7. Sjaardema, H., and Glaser, M. A. The localizing value of the clinical electroencephalographic and pneumoencephalographic findings in epilepsy. Am. J. M. Sc., **204**: 703-715, 1942.

8. Finley, K. H., and Dynes, J. B. Electroencephalographic studies in epilepsy. Brain, **65**: 256-265, 1942.

9. Elvidge, A. R. The post-traumatic convulsive and allied states *in* Brock, S. Injuries of the skull, brain and spinal cord. Baltimore, Williams and Wilkins, Revised Edition 1943.

10. Penfield, W. G. Circulation of the epileptic brain. A. Research Nerv. and Ment. Dis., Proc., **18**: 605-637, 1938.

11. Dusser de Barenne, J. G., and McCulloch, W. S. Physiological delimitation of neurones in the central nervous system. Am. J. Physiol., **127**: 620-628, 1939.

12. Dusser de Barenne, J. G., Marshall, C., Nims, L. F., and Stone, W. E. The response of the cerebral cortex to local application of strychnine nitrate. Am. J. Physiol., **132**: 776-780, 1941.

13. Adrian, E. D., and Moruzzi, G. Impulses in the pyramidal tract. J. Physiol., **97**: 153-199, 1939.

14. Sugar, O., and Gerard, R. W. Anoxia and brain potentials. J. Physiol., **1**: 558-572, 1938.

15. Gibbs, F. A., Lennox, W. G., and Gibbs, E. L. Inheritance of cerebral dysrhythmia and epilepsy. Arch. Neurol. and Psychiat., **44**: 1155-1183, 1940.

16. Gibbs, F. A., Gibbs, E. L., and Lennox, W. G. Influence of the blood sugar level on the wave and spike formation in petit mal epilepsy. Arch. Neurol. and Psychiat., **41**: 1111-1116, 1939.

17. Gibbs, F. A., Gibbs, E. L., and Lennox, W. G. Variations in the carbon dioxide content of the blood in epilepsy. Arch. Neurol. and Psychiat., **43**: 223-239, 1940.

18. Gibbs, E. L., Nims, L. F., Lennox, W. G., Gibbs, F. A., and Williams, D. Adjustment of acid base balance of patients with petit mal epilepsy to overventilation. Arch. Neurol. and Psychiat., **43**: 262-269, 1940.

19. Heppenstall, M. E., and Hill, D. Electroencephalography in chronic post-traumatic syndromes. Lancet, **244**: 261-263, 1943.

20. Gibbs, F. A. Electroencephalographic differences between post-traumatic epileptics and head injury patients without seizures. Am. J. Psychiat. (in press).

21. Williams, Denis. The electro encephalogram in chronic post-traumatic states. J. Neurol. and Psychiat., **4**: 144, 1941.

THE EEG. IN LATE POST-TRAUMATIC CASES[1]

MILTON GREENBLATT, M. D.

WITH THE TECHNICAL ASSISTANCE OF

MARIE M. HEALEY AND GERTRUDE A. JONES

The persistence of post-traumatic symptoms or the appearance of new complaints in the late post-traumatic period presents a most difficult problem to the clinician. Evaluation of the rôle of trauma is especially perplexing if careful review of the patient's past reveals that, in addition to trauma, other items are of possible etiological moment. There is the problem as to whether trauma has been sufficient to damage brain structure, and whether this damage explains the syndrome in question. This is relatively simple, however, when compared to the possibility that alterations in *function*, when structural damage is not demonstrable, may better account for the symptomatology. Any systematic study of post-traumatic cases must attempt to cope with a great diversity of post-traumatic manifestations and numerous difficulties in controlling variables.

The electroencephalogram, in so far as it gives data regarding the electrical physiology of the brain which can be correlated with other manifestations of cerebral activity, should aid in studying the effects of head trauma. It is with the above questions in mind that the EEG. in late post-traumatic cases is analyzed.

CASE MATERIAL

This study deals with 263 patients referred to the EEG. laboratory either from the Boston Psychopathic Hospital or from other hospitals and clinics. In all these cases, head trauma had been sustained anywhere from weeks to years before the EEG. study was done. The group was limited to patients who developed definite symptoms in the immediate post-traumatic period, and excluded all those with trauma of dubious severity. Essentially, these patients had immediate unmistakable symptoms following head injury, and then at some later date were referred to the laboratory either with recurrent or persistent complaints such as headache, or with some new problem such as epilepsy, or personality deterioration. Patients referred because of convulsions, having a family history of epilepsy, were excluded from the study. In this way, the group was purified, so to speak, in that the trauma was always significant and the familial influence in subsequent symptomatology was reduced to a minimum.

The accidents sustained by these patients represented every common variety of civilian trauma, and many unusual types. Fifty patients suffered falls from various heights, a few feet to 50 feet; 60 patients were in automobile, bicycle or motor cycle accidents; 14 patients were hit by various objects such as lead pipe or bowling ball; 16 patients were injured in boxing, baseball, football, basketball or hockey; and the remainder were subjected to such varied experiences as being in a train wreck, airplane crash or slipping on a banana peel.

A detailed description of the varied symptoms which led the patients to seek medical advice would require much space. Eighty-two individuals complained of headache alone or in association with dizziness, visual disturbances, nausea, tinnitus, deafness, etc. Sixty-two patients suffered from convulsive disorder—of these 40 had grand mal, 6 had grand mal and petit mal, 2 had petit mal; the remainder had grand mal plus other complaints.

Twenty-four patients suffered from "fainting spells," alone or complicated by other symptoms. In 18 patients, personality change seemed to stand in the center of the picture—with emotional instability, seclusiveness, loss of ambition, poor memory or behavior difficulties. Ten patients complained primarily of dizziness, 7 complained of visual disorders, and many more had heterogeneous complaints usually multiple and difficult to classify.

[1] From the Department of Psychiatry of the Harvard Medical School, and the Boston Psychopathic Hospital, Dr. C. Macfie Campbell, Director.

Thirty of the patients were hospitalized at the Boston Psychopathic Hospital with the diagnosis by the clinical staff of post-traumatic psychosis. The symptomatology consisted primarily of confusion, disorientation, memory loss and personality change.

Somewhat different from the symptoms presenting at the time of the EEG. study were the immediate post-traumatic symptoms. These were primarily unconsciousness (151 cases); dizziness, confusion and headaches (56 cases); fainting spells (8 cases); convulsion (8 cases); injuries such as skull fracture (40 cases); and various other symptoms.

The average age in the psychotic group (30 cases) was 29.5 years; in the non-psychotic group (233 cases) 30.5 years. Males predominated 2:1 over females, the difference in all probability being due to the greater exposure of males to traumatic hazards.

Other groups of patients used for comparative study were selected from 6000 cases referred to the laboratory from various sources over a 4½ year period.

Apparatus and Methods

A Grass six-channel amplifier with a paper speed of 30 mm. per second was employed. As the question of focal pathology was frequently one of the problems in the mind of the referring physician, bipolar localization studies with 12 or 16 electrodes were almost always carried out. In 12 electrode localization studies, 6 electrodes were placed over each hemisphere, 4 in a line parallel to the sagittal suture and six centimeters away from it, and 2 laterally at points corresponding to the inferior frontal and temporal lobes. In 16 electrode localization, 8 electrodes were placed over each hemisphere, 5 in a line parallel to the sagittal suture and 6 centimeters away from it, and 3 in the lateral aspect of the hemisphere. The activity in homologous parts of the head were compared with each other.

The records were analyzed from the standpoint of frequency, amplitude wave forms, symmetry, focal activity and response to overbreathing, then classified 1-5, in order of abnormality. Briefly the characteristics of each class were as follows (Fig. 1).

The percentage of records in each classification group was calculated for every population studied. For convenience, the records in Class IV and V were lumped together giving the *percentage of definitely abnormal records* and the data for each group studied were expressed by this simple function.

Results

Considering the post-traumatic group as a whole, the following is the distribution of records by classes and percentages:

Class I:	8 cases.....	3%	} Normal
Class II:	75 cases.....	29%	
Class III:	53 cases.....	20%	= Borderline
Class IV:	96 cases.....	36%	} Abnormal
Class V:	31 cases.....	12%	

The percentage of definitely abnormal records for the whole series is 48%—a figure in close agreement with that obtained by Denis Williams in a group of army individuals suffering from so-called "chronic post-traumatic state"(5).

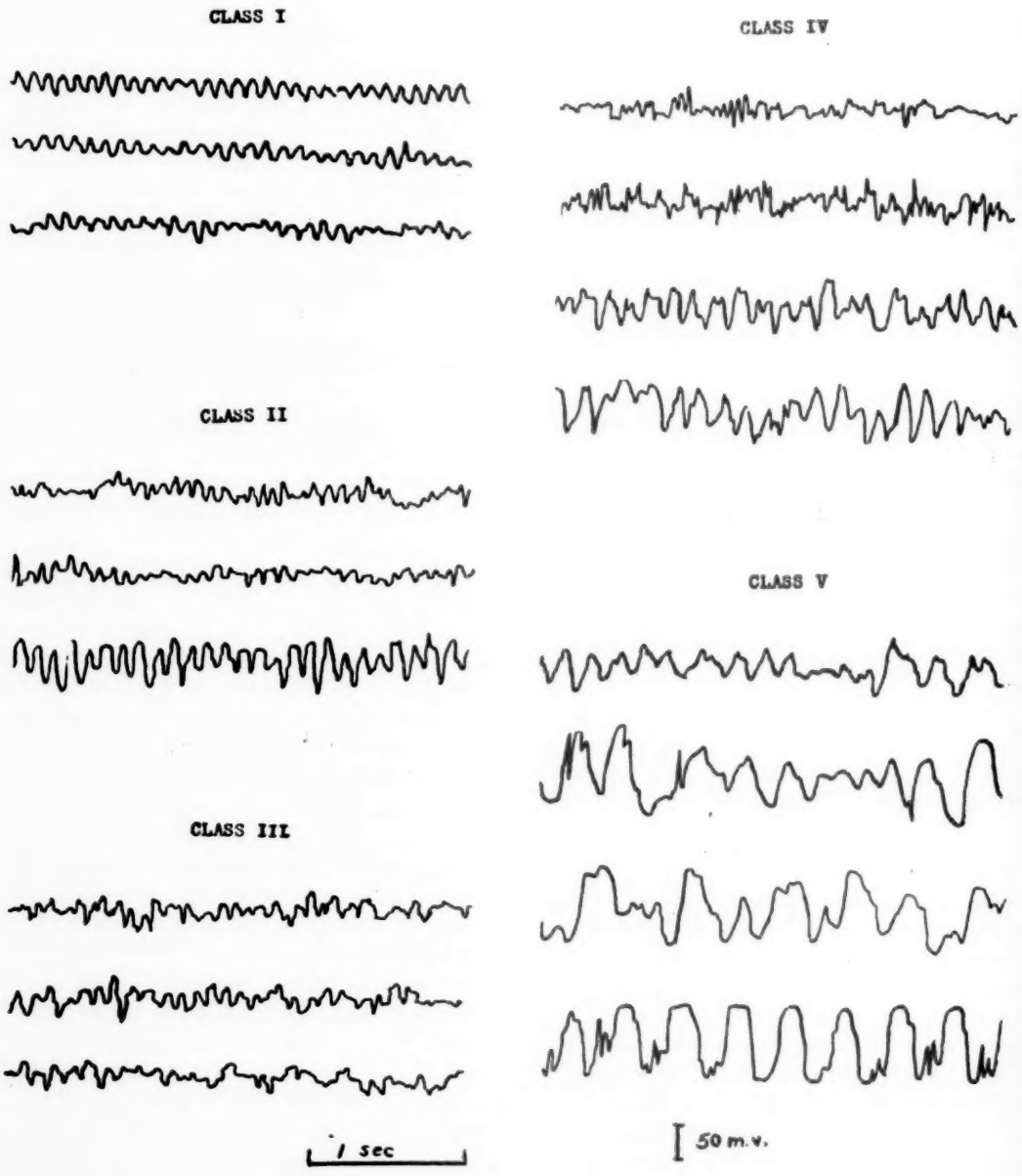
Those cases which presented severe clinical pictures were found to have significantly greater percentage of abnormal records (70%) than did those estimated as having moderate (36%) or mild (33%) symptomatology. However, the definite lack of correlation in numerous individual cases between clinical severity and EEG. abnormality was very striking.

The interval between the traumatic event and the recording of the EEG. varied greatly and the analysis of this factor and its effect on the percentage abnormality of the EEG. follows:

Interval

0–2 months:	36 cases.....	39% abnormal records.
2–6 months:	31 cases.....	48% abnormal records.
6 months–1 year:	30 cases.....	27% abnormal records.
1–5 years:	67 cases.....	53% abnormal records.
5–10 years:	25 cases.....	32% abnormal records.
10 years and over:	39 cases.....	56% abnormal records.

(In 35 cases the time interval was not known.)



ALL TRACINGS ARE FROM THE LEFT MOTOR AREA.

FIG. 1.—Classification of EEG records.

Class I: Smooth regular alpha-type (sine curve) wave forms with frequency of 8-12 cycles per second undistorted by other wave lengths. No significant change during two minutes of voluntary hyperventilation.

Class II: Slight irregularities in frequency and amplitude but predominantly alpha-type of rhythm, frequency 8-12 cycles per second as in Class I. In many of these records a slight increase in amplitude and slowing of the cycles occurred during two minutes of voluntary hyperventilation.

Class I and II records were considered to be within normal limits on the basis of experience with both normal and pathological cases.

Class III: Moderately disorganized rhythm with random slow and fast cycles. The pattern was frequently of low voltage and moderately vulnerable to overbreathing. This class was considered to be a borderline or questionable group.

Class IV: In this class were records with a considerable quantity of activity slower or faster than the normal range of 8-12 cycles per second; and in addition many of these tracings presented marked disorganization by virtue of *both* slow and rapid rhythms and marked voltage variations. These records were characteristically significantly altered by a two-minute overbreathing period which resulted in episodes of high voltage slow waves.

Class V: These records were the most abnormal encountered. They consisted of wave frequencies far beyond the normal range and were very poorly organized as a rule. Marked high voltage slow wave bursts occurred as a result of short periods of hyperventilation.

There seemed to be no definite relationship in our group between the duration of the interval and the abnormality of the EEG.

The rôle of specific factors in influencing the percentage abnormality of the EEG. in the population could, to an extent, be assessed by abstracting that factor from the group as a whole. Thus 62 patients had epilepsy at some time in the post-traumatic period: 71% of these had abnormal records; 151 patients had a history of post-traumatic unconsciousness: of these 50% had abnormal records; 40 patients had fractures of the skull as a result of trauma: of these 47% had abnormal records; 94 patients suffered primarily from headaches: of these 33% had abnormal records.

Thus it appeared that within the post-traumatic group with mixed symptomatology and with an overall abnormality of 48%, there were in reality smaller symptom groups each with characteristic percentage abnormality. It is not surprising that patients with post-traumatic epilepsy have a high percentage of abnormal records and that those with headaches have less abnormality than the average of the post-traumatic group; it is of interest, however, that neither fracture nor unconsciousness changes the average percentage of abnormality. The data with regard to fracture are in accord with clinical experience of many neurologists who conclude that the post-traumatic picture is not materially altered by simple fracture of the skull.

With regard to unconsciousness an attempt was made to analyze the percentage abnormality of the EEG. as a function of the duration of unconsciousness—as follows (96 had definite data as to the duration of unconsciousness):

Unconsciousness for minutes:	50 cases	50% abnormal records.
Unconsciousness for hours:	19 cases	37% abnormal records.
Unconsciousness for days:	17 cases	47% abnormal records.
Unconsciousness for weeks:	10 cases	60% abnormal records.

Here, too, no correlation was found in many cases between duration of unconsciousness and EEG. abnormality.

In 30 patients diagnosed "post-traumatic psychosis" with symptoms of an organic reaction type, the percentage abnormality was 58% as compared to 47% in 233 non-psychotic patients. The larger percentage was perhaps to be expected in view of the more serious symptomatology in the psychotic patients. It was not to be explained by the incidence of epilepsy which occurred in only 13% of the psychotic patients as compared to 32% of the non-psychotic patients (Fig. 2).

Relation of Post-Traumatic Population to Other Groups

The EEGs. of post-traumatic patients were compared to those of patients at large. This procedure seemed wise in view of the variability of criteria for abnormality of EEG. in different laboratories, and the consequent need for expressing data in relative as well as absolute terms.

The various groups utilized for this comparison were as follows: (1) A control group of 230 individuals consisting of nurses, doctors, medical students and hospital personnel; 7% of these had definitely abnormal records; (2) A group of 120 U. S. Army "rejectees," individuals seen in consultation by Dr. C. M. Campbell, most of whom were considered neuropsychiatrically unfit for army duty, 15% of these had abnormal EEGs.; (3) A group of 206 adult patients diagnosed psychopathic personality, 25% of these had abnormal records; (4) A group of 500 patients diagnosed schizophrenia, mostly acute cases admitted to the Boston Psychopathic Hospital over a five-year period, 27% had abnormal EEGs.; (5) A group of 288 cases of various types of neurosyphilis, 45% had abnormal EEGs.; (6) The post-traumatic non-psychotic group of 233 patients; 47% of these had abnormal records; (7) The post-traumatic psychotic group of 30 patients with symptoms mainly of an organic reaction type; 58% had abnormal EEGs.; (8) A group of 300 patients with idiopathic non-traumatic epilepsy; 72% had abnormal EEGs.

The traumatic population, so far as abnormality of EEG. is concerned, occupies a position somewhere between disorders like schizophrenia on the one hand, and idiopathic epilepsy on the other hand.

Rôle of Trauma in Abnormality of EEG.

Post-traumatic patients with one dominant type of symptomatology may show a percentage abnormality utterly different from post-traumatic patients with another type of symptomatology. One can also compare post-traumatic patients with one dominant type of symptomatology with non-traumatic patients with the same dominant type of symptomatology. This was done in relation to three symptom groups.

(1) A group of 94 post-traumatic individuals suffering *primarily from headaches* was compared with a group of 137 non-traumatic individuals suffering *primarily from headaches*. The incidence of EEG. abnormality was 33% and 35% respectively.

(2) A group of 30 post-traumatic individuals with psychosis primarily of the organic reaction type was compared with a group of 38 non-traumatic individuals with organic type of psychosis. The incidence of EEG. abnormality was 58% and 54% respectively.

(3) A group of 62 post-traumatic individuals with epilepsy was compared with a group of 300 individuals with non-traumatic epilepsy. The incidence of EEG. abnormality was 71% and 72% respectively (Fig. 4).

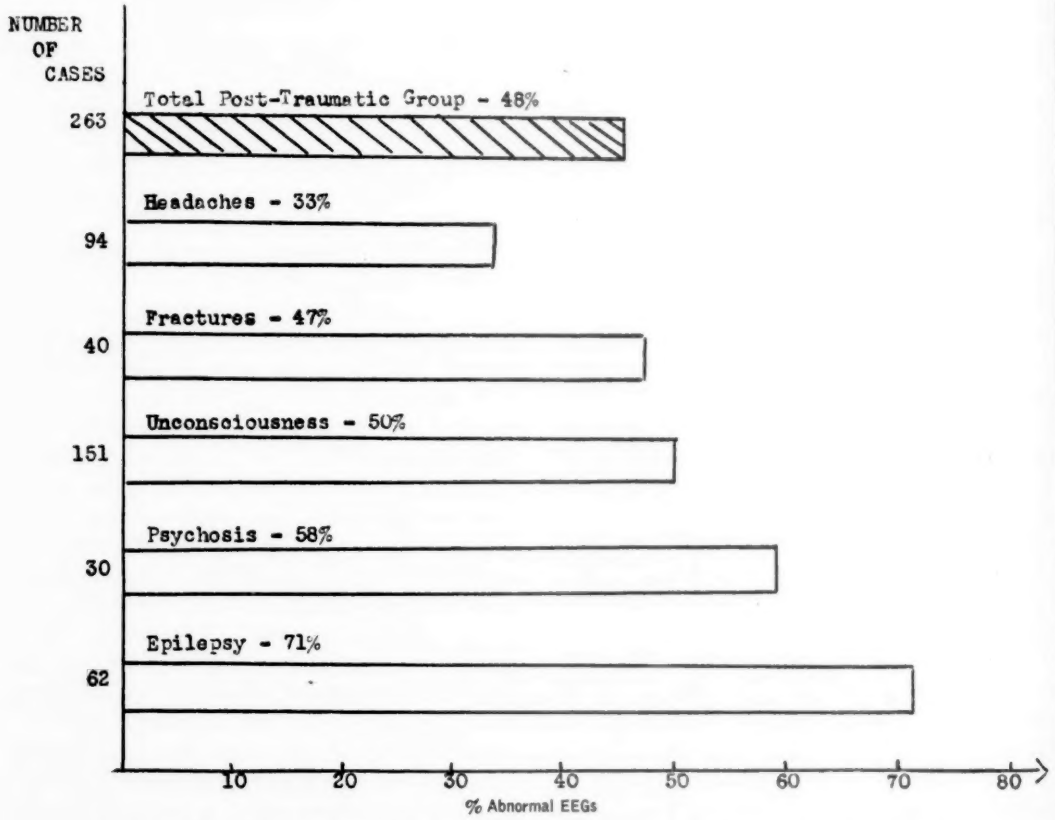


Fig. 2.—Percentage of abnormal electroencephalograms in post-traumatic cases suffering from various types of symptoms.

The percentage of abnormality in the total post-traumatic group (263 cases) is 48%; in those suffering primarily from headaches (94 cases), 33%; in those who sustained fractures (40 cases), 47%; in those who were unconscious (151 cases), 50%; in those who presented psychosis, primarily an organic reaction type (30 cases), 58%; in those who developed epilepsy (62 cases), 71%.

Focal Activity

Twenty-six patients were found to have definite focal abnormality on EEG. examination. This usually consisted of excessive

high voltage slow wave discharges which on bipolar localization studies appeared as "out of phase" activity. In some cases the abnormal focal activity was associated with relatively normal function of other parts of the brain, in other cases the focal abnormality

(2) Jacksonian seizures involved the side opposite the EEG. focus.

(3) A subdural hematoma was found in the area of the EEG. focus.

(4) A combination of findings such as fracture, skull deformity, and Jacksonian

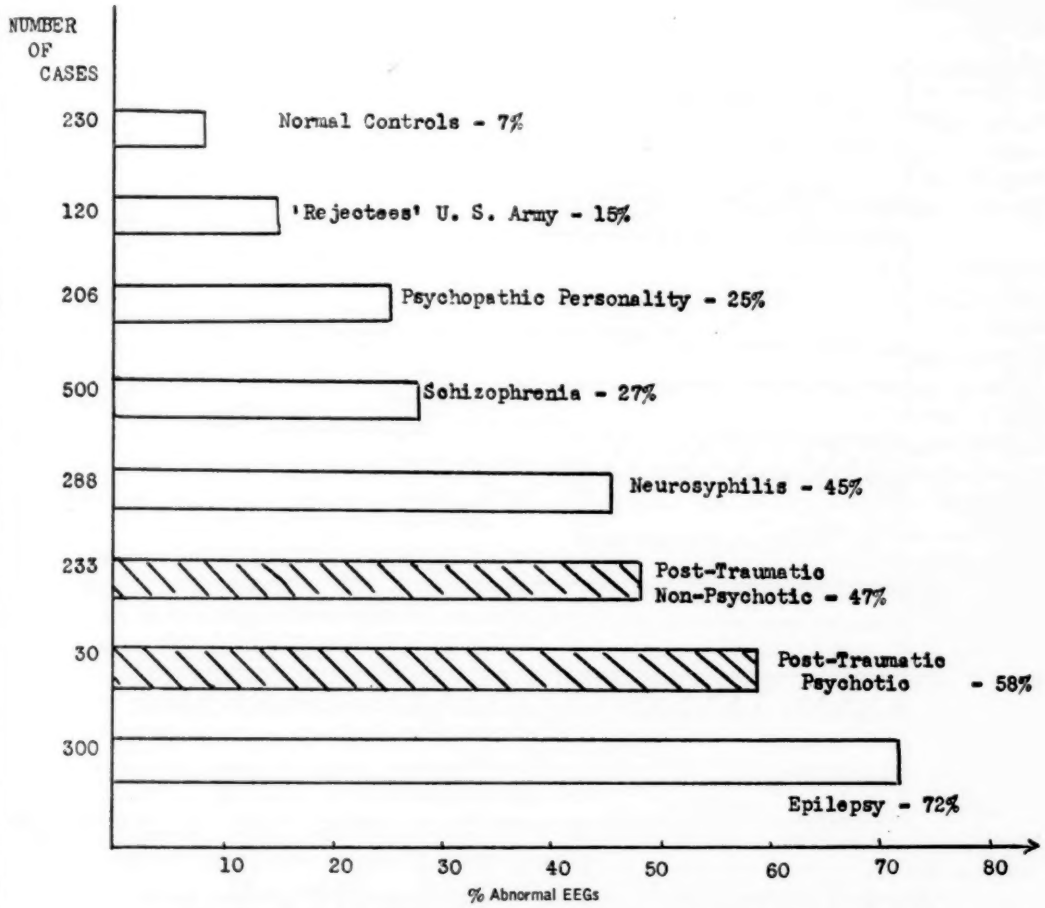


FIG. 3.—Percentage of abnormal EEGs. in various populations showing the place occupied by the late post-traumatic group.

7% of normal controls (230 cases) had abnormal EEGs.
15% of neuropsychiatric "rejectees" from U. S. Army (120 cases) had abnormal EEGs.
25% of adult patients with psychopathic personality (206 cases) had abnormal EEGs.
27% of schizophrenic patients (500 cases) had abnormal EEGs.
45% of neurosyphilitic patients (288 cases) had abnormal EEGs.
47% of post-traumatic non-psychotic patients (233 cases) had abnormal EEGs.
58% of post-traumatic psychotic patients (30 cases) had abnormal EEGs.
72% of epileptic patients (300 cases) had abnormal EEGs.

stood out above a background which was also abnormal.

In 18 of 22 cases in which definite data were available, one of four conditions obtained:

(1) The EEG. focus was found at the site of injury, fracture, decompression or skull deformity.

seizures pointed strongly to the area showing the EEG. focus.

The four remaining cases were as follows:

(1) One patient who received injury to the face and developed generalized seizures showed a left temporo-occipital focus.

(2) A patient who was subjected to mul-

tiple blows on the head and had one seizure showed a left temporo-occipital focus.

(3) A patient with severe injury resulting in compound fracture of the right frontal bone showed diffusely abnormal function in both frontal areas.

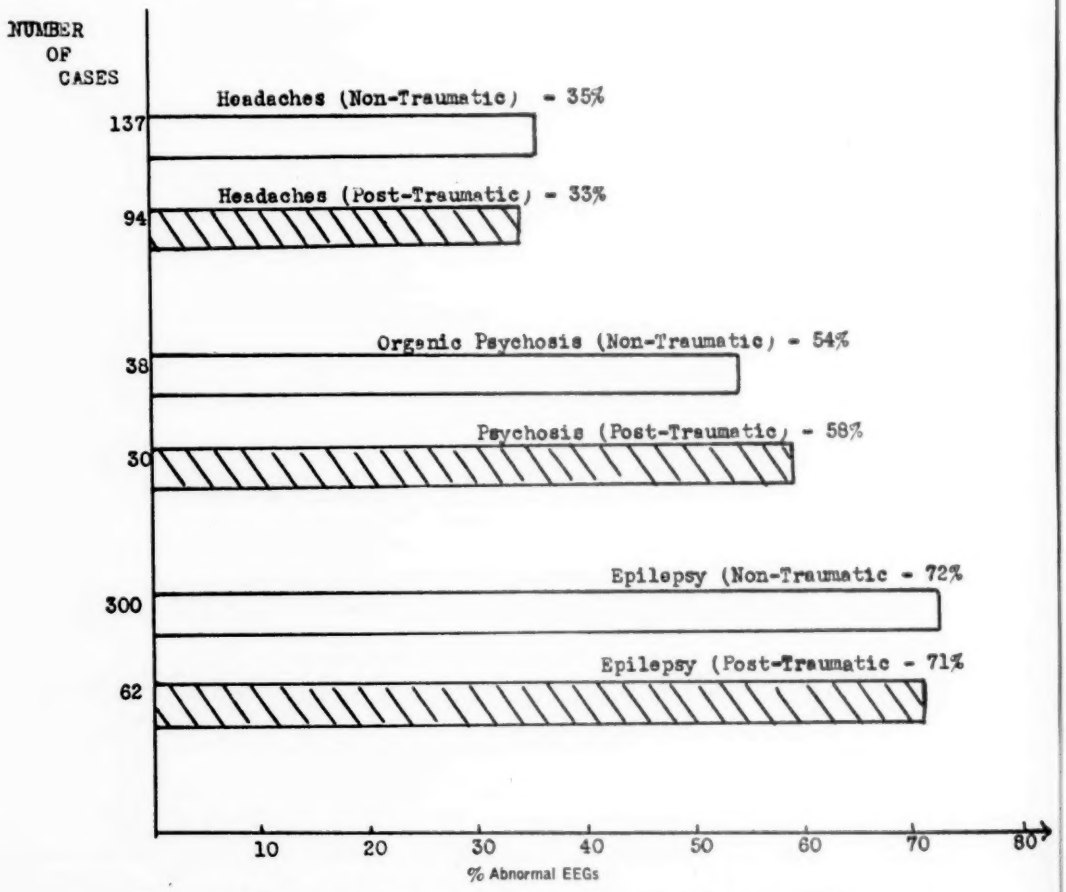


FIG. 4.—Percentage of abnormal EEGs. in non-traumatic and traumatic groups with similar symptomatology.

35% of non-traumatic patients suffering from headaches (137 cases) had abnormal EEGs.
33% of post-traumatic patients suffering from headaches (94 cases) had abnormal EEGs.

54% of non-traumatic patients with organic psychosis (168 cases) had abnormal EEGs.
58% of post-traumatic patients with organic psychosis (30 cases) had abnormal EEGs.

72% of non-traumatic patients with epilepsy (300 cases) had abnormal EEGs.
71% of post-traumatic patients with epilepsy (62 cases) had abnormal EEGs.

(4) A patient with right hemiplegia and seizures had slow activity in the right precentral and fast activity in the left precentral region.

The data in this small group of cases show that abnormal focal activity found on EEG. study is almost always supported by clinical data pointing to the area involved.

DISCUSSION

Thus far application of the EEG. to the study of head injury problems has shed a certain amount of light on the physiological pathology in these cases. In acute cases the EEG. often accurately reflects the magnitude of the disturbance, and is useful in following the changes toward recovery (3, 4, 6, 7). Problems arise, however, when the EEG. and the clinical course are not parallel or when they are, in fact, in opposite directions.

Several investigators have commented on the persistence of abnormal EEGs. in the

(2, 3, 5) post-traumatic period in some of their cases. Thus far little systematic work on late cases has been carried out. The large percentage of abnormal EEGs. in the late post-traumatic cases stands out as a remarkable fact which emphasizes the severity and chronicity of neurophysiological after-effects of brain injury. All the late cases included here, it should be pointed out, are patients definitely suffering from symptoms of some type. The abnormality seemed not to be altered in any constant way by the duration of the interval between trauma and EEG. study. The disparity between EEG. abnormality and clinical symptoms, and between severity of trauma and subsequent manifestations stands out strikingly in numerous individual cases, making it necessary to work with cases in large numbers and to express them in a simple way. In this analysis we use 2238 cases and express everything in terms of "percentage abnormality."

The comparative study of groups by this method reveals that the post-traumatic population can be resolved into simpler components on the basis of symptomatology. Thus, fracture and unconsciousness do not appear to affect the average abnormality; epilepsy by itself imparts a bias in favor of a greater abnormality of the group, and *headaches primarily* impart a bias in favor of greater normality of the group. Those with psychotic manifestations have a higher percentage of abnormality than those with non-psychotic manifestations. The percentage of dysrhythmia in late, suffering, post-traumatic cases is considerably less than in epilepsy which is remarkable for its cerebral electrical storms. We also find that post-traumatic groups with headaches, organic psychosis and epilepsy show no essential percentage difference from non-traumatic groups with headaches, organic psychosis and epilepsy.

These data suggest that there is a definite level of abnormality which is characteristic of each symptom group, that the less severe symptomatology is associated with a lesser incidence of EEG. abnormality and the more severe symptomatology with the greater incidence of EEG. abnormality. Special cases, such as epilepsy, remarkable for cerebral dysrhythmia have a peculiarly high incidence of brain wave abnormality and the wave formations are of a more specific type.

Two groups of patients with the same type of symptomatology, one post-traumatic and the other non-traumatic, may have essentially similar percentages of EEG. abnormality. It is possible, of course, that the trauma which precipitates headaches primarily is of a different severity on the average from that which precipitates an organic type of psychosis. On the other hand, it is probable that the symptomatology whether precipitated by trauma, some exogenous agent, or even stemming from inborn causes, may be a clue as to the amount of EEG. abnormality to be expected.

No claim is made that the percentages set forth are by any means absolute, since we are well aware of the differences in diagnostic criteria for many of the clinical categories, and of the heterogeneous variety of cases included within such a subdivision of disease as schizophrenia. There are also the factors of selection of cases by the physicians referring them for EEG. study, the need for ever larger groups to be investigated, and the variation in judgment as to abnormality of EEG. as a result of individual experience. Despite these shortcomings and notwithstanding numerous individual exceptions, a relationship appears to exist between symptomatology and EEG. abnormality.

Summary

About one-half (48%) of late post-traumatic cases have abnormal EEGs. The presence of fracture or unconsciousness does not appreciably alter this percentage. Post-traumatic cases with epilepsy have a higher percentage of abnormal EEGs. and post-traumatic cases with headache have a lower percentage of abnormal EEGs. than the average. Post-traumatic cases with psychosis have a slightly greater percentage of abnormal EEGs. than do those without psychosis.

Late post-traumatic cases suffering primarily from headaches have essentially the same percentage abnormality of EEGs. as non-traumatic cases suffering primarily from headaches. Late post-traumatic cases suffering from psychosis (organic reaction type) have essentially the same percentage abnormality as non-traumatic cases suffering from

organic psychosis. Late post-traumatic cases suffering primarily from epilepsy have essentially the same percentage abnormality as non-traumatic cases suffering from epilepsy.

In almost all post-traumatic cases having evidence of focal abnormality by EEG. either (1) the focus corresponded to the area of injury, (2) a fracture or skull deformity was found at the site of the focus, or (3) Jacksonian seizures were present involving the side opposite the focus.

BIBLIOGRAPHY

1. Glaser, M. A., and Sjaardema, H. The value of the electroencephalogram in cranio-cerebral injuries. West. J. Surg. Obs. and Gyn., **48**: 689-696, 1940.

2. Heppenstall, M. D., and Hill, D. Electroencephalography in chronic post-traumatic syndromes. Lancet, **244**: 261-263, 1943.

3. Jasper, H. H., Kershman, J., and Eldridge, A. Electroencephalographic studies of injury to the head. Arch. Neurol. and Psychiat., **44**: 328-350, 1940.

4. Sevitsky, N., and Marmor, J. Electroencephalography in cases of head injury. J. Nervous and Mental Dis., **95**: 285-298, 1942.

5. Williams, Denis. Electroencephalogram in chronic post-traumatic states. J. Neurol. and Psychiat., **4**: 131-146, April 1941.

6. Williams, Denis. Electroencephalogram in acute head injuries. J. Neurol. and Psychiat., **4**: 107-130, April 1941.

7. Williams, D., and Denny-Brown, D. Cerebral electrical changes in experimental concussion. Brain, **64**: 223-238, December 1941.

EMOTIONAL DISTURBANCES FOLLOWING UPPER RESPIRATORY INFECTION IN CHILDREN[1]

HELEN G. RICHTER, M. D.,[2] New Haven, Connecticut

Since December, 1940, twelve children have been observed and treated for diffuse, emotional disturbances following mild upper respiratory infections. In each case a supposedly "normal" child succumbed to an illness variously diagnosed as "flu," "grippe," "tonsillitis," "cold." In each instance the infectious phase was mild, with low febrile response; the duration was short, ranging from a few days to one week. In all these cases a well-defined personality change was established within one month following the onset of the illness.

The analysis of the emotional disturbances revealed a syndrome of anxiety, depression and anancastic manifestations, *i.e.*, compulsive, obsessive, phobic thinking and behavior. Also similar in these cases were the sequences in type and time relationships through which the symptoms developed and resolved themselves: initially, a short interval (one to two days) with features similar to a quasi-delirium with motor restlessness, apprehension, tension and lability in mood. The next phase: heightened anxieties, depressive mood with an apparent onset of compulsions and obsessions of varying duration.

Subsequently these children withdrew from their everyday interests. At first the withdrawal was from the less familiar and the more recently acquired expressions of socialization, later from the more superficial interpersonal relationships. Finally, contact with familiar persons was severely disturbed.

At the height of the emotional illness these children were preoccupied, at times "wooden," slightly retarded, sad, at times irritable, uncooperative, demanding, self-accusatory, resentful, fearful, anxious and terrified. They were busy in the performance of rituals and to them meaningful repetitious acts. Sleep and food intake were frequently disturbed. School work was marked by failure.

Recovery was slow, but also revealed certain patterns of progression. The first indications of change were usually an improvement in mood and motor activity. Regressions which followed were of varying duration. These regressive interests and activities appropriate for chronological levels lower by several years than patient's actual age, seemed marked in proportion to the severity of the entire emotional illness. A gradual subsidence of the gross compulsive and obsessive activities came relatively late in the recovery phase. In all cases, one of the last adjustments was the ability to cope with the school program fulfilling both the academic and social requirements. It would seem that the recovery phase reversed the process of withdrawal. The children felt increasingly secure for enlarging fields of activity. Their interpersonal re-adjustments started in the family group and later extended to multiple contacts with various people.

To illustrate this syndrome the observed similarities of symptoms and chronology have been stressed. Contents of thought, the expressions of such phenomena as "depression," "anxiety," and "anancasms" were as individual as the child itself. (For summary of clinical data see Chart I.)

Within nine months after the onset of the illness these children were considered "well." However, it was only through a therapeutic approach and when recovery was well underway that a more accurate evaluation of the total personality could be made. These so-called "normal" children showed potentiality and capacity for pathological emotional manifestations. In the relative security of their everyday life they were able to offset their personality liabilities by personality assets. For as yet not clearly understood reasons the very occurrence of illness here, as elsewhere(1), seemed to have served as the

[1] From the Department of Pediatrics (Child Welfare Research Fund), Yale University School of Medicine, and the Children's Clinic, New Haven Hospital.

[2] Assistant Clinical Professor of Pediatrics.

CHART I

	CASE 1	CASE 2	CASE 3
Initials	B. K.	P. M.	R. C.
Age and sex.....	10 years. Male	14 years. Male	10 years. Female
Date of onset.....	November 11, 1940	2d week of December 1940	1st week of January 1941
Temperature	101°-102°	101°	?
Initial symptoms and complaints	Sore throat	"Cold," vomiting, headache	"Cold," nausea, headache with "burning of eyes"
Duration of upper respiratory infection	One week	"Few days"	One week
Interval between physical illness and emotional disturbance	One week	Two weeks	Immediate
Complaints and symptoms	Fear of choking. Fear of illness Distraction, staring Rituals about eating, washing, urination, praying Indecisions Motor retardation Sexual phantasies Withdrawal Inability to concentrate Failure in school work	Fear of illness Staring into space Rituals about and preoccupation with stairwalking, religion, salaaming Irritability Retardation Distraction Withdrawal Failure in school work	Fear of illness Hand-wringing Head-scratching Preoccupation with sexual themes Irritable, uncooperative Very fussy and meticulous Demanding reassurance Withdrawal Failure in school work
Mood	Depressed, labile	Depressed, labile	Depressed, anxious, tense
Sleep	Fair. At times restless, dreams	Good	Difficulty in going to sleep, terrifying dreams
Food intake and weight change	Fair, very slow eating. ? weight loss	Fair. ? weight loss	Fair. ? weight loss
Personality	High average intelligence Slow, quiet, timid, reserved Sensitive, conscientious Obedient, non-aggressive Friendly, wistful Generous, loyal Religious Anxious	Average to high average intelligence Active, outgoing "Fussy," meticulous Religious Tense, anxious Usually cheerful and pleasant	Average to high average intelligence Shy, inquisitive, affectionate Obedient, fussy, "model child in school" Usually cheerful Concerned about illness Suggestible
Course of illness.....	Nov. 1940-Jan. 1941, increasing emotional difficulties Hospitalized 1-23-41, N.H.H. Discharged 2-12-41 Gradual improvement Clinic visits 3 times weekly until April 1941 Considered "well" June 1941	Clinic visits every week Gradual improvement in mood Obsessive and compulsive manifestations dropped out in March 1941 Difficulty in school work and lack of interest in play until May 1941 Gradual return to usual activities in June 1941	Gradual steady improvement in 3½ months "Well" by mid-April 1941

CHART I—CONTINUED

	CASE 4	CASE 5	CASE 6
Initials	E. B.	M. G.	J. D.
Age and sex	8 years. Male	14 years. Female	12 years. Female
Date of onset	January 12, 1941	2d week of January 1941	3d week of July 1941 at summer camp
Temperature	101°	?	101°
Initial symptoms and complaints	"Severe sore throat"	Headache, sore throat	"Laryngitis," sore throat
Duration of upper respiratory infection	Three days	One week	One week-ten days
Interval between physical illness and emotional disturbance	One day	Three weeks	Second day of illness
Complaints and symptoms	Restless Subjective feeling of confusion Ritualistic behavior at night, amnesia for this type of behavior Preoccupation with religion and sexual themes Retarded Withdrawn Failure in school work	Fear of illness, brain tumor? Irritable, fussy Obsessively clean and tidy Rumination about self Retarded Withdrawn Failing in school work	Fear of death by choking Fear of being alone Fear of burglars Fear of "cat man" Irritability, distractibility Fussy, demanding behavior Night terrors Had to return home from summer camp
Mood	Depressed and anxious, labile	Depressed, crying	Slightly depressed, apprehensive
Sleep	Restless, interrupted, night terrors	Poor, restless	Very poor, difficulty falling asleep, wants somebody in room to talk to her, wakened by frightening dreams
Food intake and weight change	Poor. ? weight loss	Poor. Weight loss 5 pounds	Poor, fussy eater. Weight loss, ? 5 pounds
Personality	Average intelligence Active, alert Inquisitive, obedient Affectionate Very responsible Usually cheerful	Average to high average intelligence Self-conscious Sensitive, devoted to mother Efficient, conscientious, careful, inclined to be fussy Usually cheerful	Superior intelligence Active Very conventional Sensitive, conscientious, wistful Meticulous Tense Jealous of younger sister
Course of illness	4 weeks out of school General improvement through February and March Complained of inability to concentrate in April Improvement in school May "Well" by June 1941	Gradual improvement in mood and motor activity Obsessions became less Active in house Did not return to school for rest of academic year Considered "well" by June 1941	Improvement gradual Sleep and appetite normal in six months Fears receded slowly Aggression against sibling marked until May 1942 Considered well June 1942

CHART I—CONTINUED

	CASE 7	CASE 8	CASE 9
Initials	H. B.	J. T.	R. S.
Age and sex	8 years. Female	5 years. Female	9 years, 6 months. Male
Date of onset	1st week of August 1941 at summer camp	Last week of January 1942	First week of April 1942
Temperature	101°-102°	101°-102°	Temperature not taken
Initial symptoms and complaints	Sore throat, "bad cold"	Cold, "flu," vomited	"Mild cold"
Duration of upper respiratory infection	"About one week"	One week	Three-four days
Interval between physical illness and emotional disturbance	Third day of illness	Second day of illness	Third day of illness
Complaints and symptoms	Scared "something terrible would happen" Choking sensations Refusal to be alone, insisted on seeing mother Irritable, uncooperative, labile Fussy about cleanliness, frequent changes of dresses Night terrors with fears of being pursued and apprehended by a strange male figure Thought she could not see well Had to return home Withdrawn, distractible	Refusal to leave mother Feeling of impending doom Irritable, fussy, demanding Had to have several baths a day Repeated change of clothing "Cleaned house constantly"	2d day of illness choking sensation Very apprehensive 2 days later started touching furniture, pictures, books, pillows and trees with buttocks and then would kiss part of object touched by buttocks Irritable, uncooperative Seemed preoccupied, withdrawn Afraid to play with "rough boys" on street Refused to go to Hebrew school
Mood	Labile, apprehensive	Apprehensive, slightly depressed	Surly, slightly depressed
Sleep	Poor, unwilling to sleep alone in room. Frequent wakening by terrifying dreams	Poor, refused to sleep alone Night terrors, pursued by large cats, about to be apprehended by animals	Poor, restless, wakened frequently by "bad dreams"
Food intake and weight change	Fussy. Food must be served "just so." No apparent weight loss	Loss of appetite. Food had to be served "just so." All dishes had to be "clean." No apparent weight loss	Prior to present illness, voracious eater. Ate less but food intake still good
Personality	Good intelligence Active Easily persuaded Conscientious, obedient, sensitive Much concerned about illness in members of family Interested but frightened by current events Neat and orderly of possessions Vied with older sister for parents' affection	Good intelligence Affected manners Considered very good, docile, obedient Anxious about 16-year-older brother Easily frightened, cautious Very neat and clean	Dull normal intelligence Obedient, non-aggressive "Mama's boy" Cautious, fairly neat Feelings easily hurt School performance never very good but worse since illness Participated very little in school activities
Course of illness	Poor school performance in fall, with preference to stay at home Gradual decrease of symptoms Improved by February 1942 when parents took child to Florida	Gradual improvement Returned to Sunday School in six weeks Refused to go to kindergarten during spring Gradually would leave house Obsessive symptoms disappeared by early summer 1942	Course unknown Mother uncooperative

CHART I—CONTINUED

	CASE 10	CASE 11	CASE 12
Initials	P. P.	F. S.	S. B.
Age and sex	9 years. Male	10 years. Male	11 years. Male
Date of onset	5-7-42, mild U. R. I. Cervical glands swollen	August 31. Adm. N. H. H. 9-2-42; dis. N. H. H. 9-5-42	September 28, 1942
Temperature	5-13-42, "very sore throat"—100° during U. R. I.; 104.5° with sore throat	103° on admission	101°
Initial symptoms and complaints	As above	Headache, dizziness, vomiting Hospital diagnosis: pneumococcal fever, cong. heart disease Pneumococcus in N. & T. culture	"Slight cold"
Duration of upper respiratory infection	Five days (from time of onset of "sore throat")	Six days	Three days
Interval between physical illness and emotional disturbance	Fifth day	Seventh day after onset of illness	Second day of illness
Complaints and symptoms	Choking sensation 1st day of sore throat Writing in air with index finger Compulsive circular motions with fingers Tapping of feet. Humming Fear of G-men. Would shoot brother in fantasy Threatened to kill brother and sister Alternating marked restlessness with deep sleep State of consciousness *not* clouded Very dependent on parents	Scared father (now in jail) would climb through window and kill him with gun. Very apprehensive about burglars concealed in house. Constant rumination about wrongs done by father. Refused to let mother go to work, very dependent on her. Constantly cleaning and scrubbing floors in compulsive manner Fussy, irritable Withdrawn, refused to go to school	Scared something would happen, thought walls of room would fall in on him. Jumped out of second-story window to avoid disaster. Thought he would have to fly away and was moving arms in flying motion. Preoccupied with theme of levitation Excited, irritable, "wound up" Dependent on mother
Mood	Apprehension very marked Tearful, labile	Apprehensive, labile, slightly depressed	Very apprehensive, slightly depressed
Sleep	Restless sleep, jabbering about aggressive acts	Poor, frequent wakening with terrifying dreams. Afraid to go to bed	Sleep restless
Food intake and weight change	Appetite poor; refused much food but at times would grab food and stuff it into mouth with fingers. ? weight loss	Loss of appetite. Very fussy about what to eat	Loss of appetite
Personality	Good intelligence "Perfect boy"—obedient, affectionate, non-aggressive Enuretic, nail-biter Very conscientious, worrisome Very religious Overmeticulous with school work	Average intelligence Very responsible (is father to his younger brother and sister) Conscientious, obedient, sensitive Made excellent adjustments to restrictions because of cong. heart disease, glad he does not have to fight. Religious. Fairly neat and orderly. Had adjusted well to father's absence from home	Superior intelligence Serious, very cautious, obedient Very sensitive about relatively small stature, afraid of getting hurt Not very aggressive, plays much by himself Interest in aeroplanes for 2 yrs. Meticulous. Conformer to social conventions. Affectionate
Course of illness	Became increasingly aggressive and active Obsessive symptoms disappeared gradually during summer 1942 Entirely well by September 1942, able to resume school work	Gradual clearing of all symptoms in two months Has resumed all former activities	Improvement marked in six weeks Able to resume all activities

trigger-stimulus to the appearance of gross emotional disturbances.

The etiological factor or factors in this syndrome are obscure. Attempts to correlate a specific bacteriological agent with this illness have failed. The relative mildness of the initiating upper respiratory infection explains in part why nose and throat cultures were not obtained except in four cases: Cases 1, B. K. two months after onset of illness; 8, J. T. and 10, P. P. during the height of illness revealed no pathogens; 11, F. S. showed pneumococcus VIII in the nose culture. An initial consideration that this syndrome might be associated with streptococcal fever has been in no way substantiated. The lack of evidence here also is due to the lack of accurate bacteriological studies in the initial phase of the illness. Studies to determine the presence of virus disease were not undertaken; again, it is to be emphasized that these children generally were brought to our attention because of the altered personality, not for the initial clinical symptoms.

Careful inquiry into the dietary habits of each child has not given cause to suspect vitamin deficiencies in this illness. All children had an adequate diet and enjoyed good appetites prior to onset of illness. Cases 6, 7, 8, had daily supplementary vitamins (A, B, D) in their diet. Food intake decreased during the days of the respiratory illness except in Case 9. However, it would seem improbable that these children developed a vitamin deficiency within a week of such magnitude as to account for the disturbed behavior. Irritability, though present, was not as marked as that commonly associated with B-deficiency; polyneuritic symptoms were absent in all cases.

Except in Case 11, F. S., who had congenital heart disease with mitral insufficiency, there was no evidence of any chronic illness nor long-term disabling condition.

The possibility of drug intoxication leading to a symptomatic neurosis was considered. Special inquiry was made into an administration of sulfanamides. Only in two cases (S. B., Case 12, and P. P., Case 10) was sulfathiazole given in appropriate dosage, but this *after* the emotional disturbances became manifest. Cases 1, B. K., 2, P. M. and 3, R. C. received small doses of phenobarbital for "nervousness." Case 4, E. B., was treated with "argyrol sprays" during the U. R. I. The other cases were treated by supportive measures during the early phase of the illness.

A careful survey of the possibly pertinent literature has not revealed descriptions of this syndrome following relatively mild upper respiratory infections. The symptoms differ from the commonly observed sequelæ of so-called "influenza": malaise, vasomotor disturbances, unusual sweat reaction, and feelings of depression. The relatively rare reports on psychotic states associated with influenza are primarily noted in adults. Symptomatic psychoses of this type were described by Sturm(2). In the cases, which occurred in the 1939 spring influenza-epidemic in Prague, the initiating illness was more typical of epidemic influenza than cases in the present series, and the psychological manifestations were psychotic rather than neurotic, with hallucinations and delusions followed by amnesia for the short psychotic state.

Gamarnik(3) in an article, "Neuropsychic sequels of influenza in young children," describes three children with tetany, one with ptyalism, and one child aged 2½ who manifested "psychoneurotic" behavior. Unfortunately the abnormal behavior is not discussed in detail.

The onset, course and type of emotional disturbances in these cases do not resemble similar phases in encephalitis (Bond(4), Thiele(5)). In the chronic encephalitis group hyperkinetic, restless, uncontrolled, impulsive, explosive and overaggressive behavior associated with varying degrees of organically determined mental changes is characteristic.

In the present series the initiating emotional disturbance has been designated by me as one similar to sub-acute delirium. Kanner(6) quotes the Meyerian formulation of delirium: "A reaction characterized by hallucinatory fancies, usually of a fearsome and worrisome nature, of dream-like, either with disorientation or at least misinterpretation of the situation due to haziness or scare" and augments it with particular emphasis on the clouding of consciousness. In the

cases described above it is important to note that some features of "delirium" were present *but not* the clouding of consciousness. The children in the most disturbed phases were oriented for time, place, person; hallucinations were absent. The emotional tone of fear was intense and the subjective feeling of impending doom strong. In this setting, activity was noted not dissimilar to Kanner's(6) "occupational deliria," the "various incoherent activities, pulling at bedclothes or making various motions, the meaning of which may sometimes be identified with fragments of purposive performances, such as handling toys or doing the homework." In the children here described, such activity survived the quasi-delirium and became increasingly compulsive in nature.

Although the affect of the children was depressed, the lability of mood, the short duration of the depression and the slight degree of retardation, the lack of diurnal swings, the absence of periodical recurrence or development of a manic-phase, the absence of hereditary factors (Rehm, Otto(7)) and the age (Kasanin, Jacob and Moses R. Kaufman(8)), argue against the presence of a depression in terms of manic-depressive psychosis.

It has been previously observed in adults that obsessive, compulsive and phobic tendencies become markedly exaggerated during depressions (Lion(9)), extreme tensional states and physical illness (Richter (10)), and will spontaneously recede when the stressful situation has abated. Similar detailed observations have not been reported on younger children. Perhaps the general acceptance that certain compulsive repetitive activities and phases of obsessive "harping on subjects" are part of "normal" behavior in young children has masked possible early psychopathological implications of such actions in some instances. Obsessive and compulsive neuroses are uncommon before puberty. The relatively rapid appearance of the compulsive, obsessive and phobic manifestations in association with other factors described above differentiates this syndrome from the more classic "compulsion neurosis."

Anxiety features, although invariably present, were diffuse, did not lead to typical panic states. Studies on anxiety in children by Richards(11) and Langford(12) offer points of similarity, but absent in these studies are the initiating upper respiratory infection, the quasi-delirium, and the later marked obsessive, compulsive features and their recession.

The investigation of the total personality of these patients has been very revealing and offers some understanding of the "psychological mechanisms" in the described behavior. The parental informants in all cases referred to their children as "good" or "perfect," "best child," "wonderful helper" prior to the onset of the U. R. I. The children earned this evaluation for the following reasons:

(1) Ready obedience to a point of docility.

(2) Dependence on mother and/or father, particularly in seeking permission and approval.

(3) Unquestioning subservience to parental, school and church authority.

(4) Meticulous care of the personal needs, neatness and perfectionistic striving in execution of "chores," school work, recreational activities.

(5) Unwillingness to enter into quarrels, arguments, fights with other children.

This type of behavior, so essentially restrained and repressed (overtly non-aggressive), so ready to conform to the social-cultural patterns, has made these children most acceptable members in society. While the environmental stresses and strains were minimal, each child could function adequately. Prior to illness, these children, because of their psychopathological tendencies, behaved outwardly in a non-troublesome fashion; they did not produce recognized behavior problems. Indications of tension, worrisome attitudes, preoccupations, tendencies to perfectionism, and in a few instances individual, well-defined symptoms of emotional disturbances as enuresis, prolonged nail-biting, hypochondriasis, were left unheeded by the guiding adults.

With the onset of illness, the children's defenses quickly weakened and the potential capacity for anancasms became overt expressions, exaggerated forms of their so-called "normal behavior," their inherent means to cope with difficulties. The content of thought during the most disturbed phases (see Chart

I) revealed in all instances themes dealing with unpleasant, threatening, noxious, circumstances about to befall the patient against which he "must do something"; hence the compulsive and obsessive behavior to ward off, appease or bribe the offender.

In treatment, these children have forced the therapist to recognize a central theme of aggression. Repeatedly the children revealed aggressive, hostile, ambivalent feelings and thoughts; they were frightened by them, they felt guilty about them, they did not know how to express them directly and appropriately. Prior to the altered circumstance (*i.e.*, the initiating upper respiratory infection) their attitudes were passive in self-protection. In the new situation the formerly repressed, hostile thoughts broke through; the children were bewildered and confused and terrified; they tried to put their old defenses to work, but these had to be enhanced, exaggerated, and had to include more diffuse forms of expression. The growing realization of the individual, that his time-honored means of coping with anxiety were now ineffectual, rendered him increasingly disturbed.

The following examples from the case histories may illustrate the above formulation. The first case is of particular interest as I had the opportunity to study this child four years prior to the present illness.

Case 5, J. D., was first seen in psychiatric consultation[3] in 1937 at the age of 6½. At this time the child was overtly aggressive against the mother, striking and hurting her with thrown objects. The patient was very fussy about food, personal habits and dress. All toys had to be thoroughly washed and cleansed before she could play with them. She was over-polite and conventional in talk and behavior. After some obvious tension-creating situations, *i.e.*, the father's alcoholism and the mother's rigid and exaggerated demands on the child were modified, symptoms in the patient receded. With this improvement the parents terminated therapy, and the recognized severe sibling rivalry was not worked out with and for the patient. Subsequently, J. D. is reported to have made a generally excellent adjustment until the summer of 1941 (see Chart I, Case 5, for details), when she became sick with an upper respiratory infection while at camp. Her obsessive fears that burglars or the "Cat Man" would harm her or her family were accompanied by meticulous behavior. The sleep disturbance, however, became worse, and the patient refused to be alone in her bedroom, insisted that her younger, prettier sister talk to her until she fell asleep. Repeated wakenings from night-terrors were used to interrupt the parents' sleep. Finally, patient focussed her problem on the severe sibling rivalry. On one occasion she attempted to shoot the sister with her father's revolver. The parents needed much guidance to accept this situation and to make changes that allowed temporary separation for the patient from the sister. The patient gained increasing insight into the rivalry, recognized the chronicity of her hostile feelings, the exaggerated outburst, and finally was able to become more tolerant of herself and less overwhelmed for hating the sister. She recognized the realistic aspects of this situation and her irrational interpretations.

This patient toward the end of therapy reviewed her entire problem by telling a story in which her parents, sister and self were disguised as characters from the more lurid and "thriller-type" of comic strips and radio programs. She quite spontaneously identified herself as a figure with a hypnotized right arm which committed hostile acts (killing) over which the possessor of this arm had no control. Patient then explained that the hypnotized member was now "under control" and that her own hostile thoughts need not express themselves so violently. After this, to her satisfactory interpretation, she slept better and her meticulous, fussy, demanding attitude subsided, and the rituals associated with going to bed dropped out completely.

Case 11, F. S., is noteworthy as a realistic trauma occurring six months prior to illness and apparently well-handled by the patient, became the central theme of aggressions and fears with illness. (See Chart I, Case 11, F. S., for details.) This boy's father had deserted the family in February 1941 and in March forced an entry into his former home, carrying a revolver and threatening to shoot the patient if he did not reveal where the mother kept her meager reserve of money. The patient was terrified by this incident. Later, when the father was sent to jail for grand larceny and bigamy, the boy suffered humiliation, however protected the father in conversation with others. He refused to admit to himself that he had any thoughts but "love and faith in Dad." With onset of the illness the boy could not believe that his father was held captive in jail, feared repeated, threatening intrusion by the father into the home. He also feared "men in closets," burglars in the house, and occupied himself with rituals to appease the hostile invaders. He spent hours each day scrubbing floors and keeping the house immaculately clean. Later, while under therapy, he was able to recall his desires to kill his father for the shame and abuse he had brought to mother and the children. He admitted fear that he might "let go" and hurt his father if he ever saw him again. As the child improved, he differentiated clearly between the existing circumstances *re* father and mother and the superimposed, irrational fears which had been created through his unrecognized hostile feelings. As the theme of aggression became

[3] Seen through the facilities of the Department of Psychiatry and Mental Hygiene, Yale University School of Medicine.

understood and was tolerated by him, he became more assertive and domineering at home and at school. His anancasms then disappeared.

Fragments from case histories will further illustrate this need to come to terms with inner aggression and finally to find appropriate expression for it. One boy (Case 1, B. K.) summarized his improvement by stating that his stay in the New Haven Hospital had been better than "Pop-Eye's spinach." On returning to his home this timid, withdrawn child beat up his schoolmates and proudly presented a black eye as proof of the fracas. Later this type of behavior was modified, B. K. became a leader in his group in marked contrast to his former subservience and docility.[4]

One mother admitted that she had consulted an endocrinologist, prior to bringing her child to us, to obtain "glandular treatment to make the boy grow." She had ascribed her son's unwillingness to play rough games, to fight his fights, and his fear of physical injury, to his relatively small body-build. The patient (Case 12, S. B.) revealed on the first interview his constant preoccupation with death and destruction of others, and his fears that the desires might become uncontrollable. His weapon of destruction was the aeroplane. During his illness he had to make compulsive "flying motions" with his arms, and on one occasion "flew out" of a second-story window. With improvement this boy was able to play football, where he could give and take the minor injuries that come with the game.

Summary and Conclusions

During the last two years twelve children were studied and treated for severe emotional disturbances following mild upper respiratory infections. An attempt has been made to describe the observed emotional disturbances characterized by compulsive, obsessive and phobic behavior in a setting of mild anxiety and depression. The initiating illness was variously diagnosed as "flu," "grippe," "cold," "sore throat." The febrile responses were low; the children did not appear acutely ill. During the respiratory infection a quasi-delirium, marked by apprehension without clouding of consciousness and of short duration, ushered in the anancastic behavior. Anancasms persisted for about six months. All children recovered within nine months after onset of illness.

CHART II

Social-Economic Status:

Proletarian background	3
Lower to middle-middle class background	6
Upper middle-class background	3

Racial Descent:

Old American stock	3
Italian	2
Irish	3
German	1
French-English-Irish	1
Russian-Jewish	2

Religious Affiliations:

Protestant	5
Catholic	3
Catholic-Protestant	2
Jewish	2

History of Obvious Psychoses or Mental Disease in Families—None.

6 families—1 parent "nervous," irritable.
1 family —1 parent (mother) of very low intelligence.
1 " —Both parents anancastic, tense, father treated for alcoholism.
1 " —Mother diabetic and hypochondriacal.
1 " —Father subject to depressive moods and gastro-intestinal symptoms.
1 " —Father in jail for theft.

General Physical Condition of Patients Prior to Illness:

Has been good to excellent, except E. B. who had mumps with hallucinations during the acute stage (æt. 4), and F. S. who has congenital heart disease with mitral insufficiency.

Intelligence:

Superior	2
High average	1
Average	8
Dull normal	1

Behavior:

No overt behavior problems prior to illness.

During the heights of the emotional illness the children were apprehensive, preoccupied, demanding, self-accusatory, labile in mood, very slightly retarded. Obsessive thoughts and compulsive activity was marked.

[4] This case will be described in detail elsewhere.

Specific etiological factors could not be determined. Attempts to correlate the illness with bacteriological agents, vitamin deficiency, and drug intoxications were unsuccessful.

Differential diagnoses between post-influenzal conditions, chronic encephalitis, deliria, anxiety states, manic-depressive phenomena and classic "compulsion neurosis" were considered.

A survey of the possibly pertinent literature did not reveal descriptions of this type of symptomatic neurosis in association with mild upper respiratory infections.

Emphasis was placed on the type of personality which succumbed to this illness. In all instances the children were subservient, docile, cowed by authority, perfectionistic in their strivings and meticulous in personal habits. As a group they were repressed and non-aggressive. Probably, because of these qualities, they were valued in society. Their conforming attitudes masked the underlying capacities for psychopathological manifestations.

From observations in intensive psychotherapy it seems justified to conclude that these children had difficulty in expressing appropriately their inherent hostile and aggressive thoughts and feelings. With illness these aggressive tendencies became manifest and dominant, and the patients attempted to cope with them by anancastic behavior. Although the initiating illness was an upper respiratory infection, the children stressed the fact of becoming *sick* and invariably interpreted the illness, *per se,* as "punishment" for some ununderstood "naughtiness" or "wickedness" with associated strong feelings of guilt. When the individual recognized his particular hostile-aggressive desires, and learned to channel them effectively, the anancasms disappeared. With the conclusion of therapy, these children ultimately reestablished themselves in their society better adjusted than prior to the onset of illness.

BIBLIOGRAPHY

1. Richter, H. G. Some observations on anancasms. Am. J. Psychiat., **96**: 1459-1467, 1940.

2. Sturm, D. Occurrence of psychoses during spring epidemic in Prague 1939; Forms of influenza psychoses. Psychiat. Neurol. Wchnschr., **41**: 131-132, March 25, 1939.

3. Gamarnik, I. Y. Neuropsychic sequels of influenza in young children. Vrach. delo, **20**: 223-226, 1937.

4. Bond, C. S. The treatment of behavior disorders following encephalitis, an experiment in re-education. 1931, Commonwealth Fund, New York.

5. Thiele, Rudolf. Zur Kenntnis der psychischen Residuärzustände nach Encephalitis epidemica bei Kindern und Jugendlicher. 1926, S. Kafe, Berlin.

6. Kanner, L. Child psychiatry, pp. 179, 180. 1937, Charles Thomas, Springfield, Illinois.

7. Rehm, O. Die Untersuchung von Kindern manisch-depressiver Kranker. Ztschr. f. d. Erforsch. u. Behandl. d. jugendlichen Schwachsinus, **1**: 3, 1910.

8. Kasanin, J., and Kaufman, M. R. A study of the functional psychoses in childhood. Am. J. Psychiat., **86**: 307-384, 1929.

9. Lion, E. G. Anancastic depressions. J. Nerv. Ment. Disease, **95**: 730-738, June 1942.

10. Richter, H. G. See reference 1.

11. Richards, E. Practical features in the study and treatment of anxiety states. N. E. J. Med., **210**: 633-637, March 22, 1934.

12. Langford, W. S. Anxiety attacks in children. Am. J. Orthopsychiat., **7**: 210-218, 1937.

PSYCHOSES IN PATIENTS WITH EDEMA [1]

NATHAN ROTH, M.D., New York, N. Y.

Organic diseases which impair the structure of the body, particularly if the impairment is readily perceivable, exert a profound, psychological effect. It is to be expected that attempts at repression of the knowledge of the distortion of the body image will be prevalent. It is further to be expected that, should a psychosis ensue in the course of such organic disease, the emotionally tinged material which had hitherto been less clearly in the field of the patient's awareness due to the repressive tendencies, would then pour forth in greater or less clarity. Such material should lend itself to ready understanding and interpretation if it is borne in mind that it represents, in symbolic fashion, the patient's knowledge of the distortion of his body image.

The knowledge of one's body, the body image, is organized and integrated through cortical activity, presumably in the lower parieto-occipital region of the dominant hemisphere, with the aid of perceptual data gathered from one's own body and the bodies of others. Similarity of opinion concerning specific bodily characteristics prevails among large groups of people. Accordingly, specific distortions of the body image as a consequence of organic disease, will provoke similar thoughts in patients and result in the appearance of common features in the accompanying psychoses, due allowance being made for individual personality characteristics and previous experiences.

Lauretta Bender(1) has demonstrated that the mechanism of psychoses associated with somatic diseases that distort the body structure is "due to definite and readily determined features," one of which is "the discrepancy between the constitutionally embedded and socially determined concept of the body image or postural model and the actual physical personality or body structure determined by the pathologic process," and that such psychoses have various characteristics, such as "specific symptoms of imperception of the body defect or discrepancy between the body image and body structure. . . . ."

The present study concerns itself with the psychopathologic processes occurring in patients whose bodies are altered by the presence of edema fluid. Before the onset of a psychosis, the distortion of the body image due to the presence of edema provokes thoughts which are remarkably similar from patient to patient; thoughts which are reported in almost stereotyped fashion. The ensuing psychoses are characterized by certain dominant motifs which constantly recur. The common features in all of the psychoses reported here, despite the variety of etiologic factors, are due to the fact that problems of the distortion of the body image determine the content of all of them.

Clinical Material

The clinical material of this study comprised 25 patients with localized edema of the body or anasarca. Concerning the subject of their edema, all of these patients expressed certain thoughts with remarkable constancy. These are: complaints of restriction of movement due to the edema; a marked feeling of weakness and of increased heaviness of the body and limbs; a distorted and abnormal appearance of the body, both to the patient and others; a feeling that edematous parts of the body are "tight" and "bound up"; a fear that parts of the body will burst; a fear of the rising of the level of the edema; feelings of resultant helplessness, inability to work and dependency on others. These ideas are present in varying degree in different patients. They may be elicited before, during or after a psychosis, and their accompanying affect is always unpleasant.

Case 1.—A 68-year-old colored female, with hypertensive and arteriosclerotic heart disease, in whom vitamin and protein deficiency probably contributed to the edema, had marked anasarca involving the lower limbs, abdominal wall, breasts, eyelids and bulbar conjunctiva. She complained

[1] From the Psychiatric Division of Bellevue Hospital and the Department of Psychiatry, College of Medicine, New York University.

chiefly of a fear of her body bursting and of the rising level of the edema. She said, "It feels terrible—tight, hard. To me it feels my body all swollen up and you can't bend yourself and you are afraid to try. You try to get up like that and you are afraid you would burst open or something. You are afraid to take a chance. (How does your chest feel?) It feels like it would be very dangerous. Way down here (indicating pelvis) it don't feel so bad, but when it commence crawling up, it gets very dangerous. You are more luggish and heavy; you can hardly carry your body. (Do you feel as though your chest might burst open?) I have heard of its bursting. It would burst open and water would run out."

CASE 2.—A 53-year-old white female with decompensated, rheumatic heart disease, had marked edema of the lower limbs extending up to the sacrum; the liver was palpable three finger-breadths below the costal margin, but there was no ascites. She complained chiefly of the distorted appearance of her body and of her feelings of helplessness. "My legs are swollen. They are helpless. They fall down on the floor when I'm standing on them. Can't stand, can't walk on them. (How does it look to have swollen legs?) It looks terrible. It looks like I had elephantiasis. I've seen cases of it in South America, and it's really terrible. It's horrible to look at. You are helpless and have to depend on people, which I don't like to have to do."

CASE 3.—A 52-year-old white female with hypertensive heart disease, had pulmonary congestion, an enlarged liver and edema of the lower limbs. She complained of the heavy feeling of her limbs, of the fear that parts of her body would burst, and of her social inefficiency due to her illness and which she related to her edema. She also complained of the mysteriousness to her of her somatic disease, a factor which L. Bender(*2*) has emphasized. The patient said: "My legs were swelling, and it was rather hard to control them. This illness was so questionable to me. (What do you think makes your body get swollen?) I wonder what makes my body get swollen. Sometimes I think it's water. I seem to fear dropsy. I always wanted to be capable until I shut my eyes, and I fear my heart condition is going to make me quite incapable and that's a tragedy if I have to live that way. (What else do you think about dropsy?) You dilate and dilate and what's next I don't know. (What happens to people who dilate like that?) Then you die. (Do you burst open?) I imagined that, my word of honor. (Where do you burst open?) Wherever you are dilated the most. In my legs. I always thought in the ankle part. It was going up and there didn't seem to be any chance of conquering it. (How does it feel when your feet are swollen?) I don't like it. They felt like putty and as though they didn't belong to me. I read about Frankenstein—had so many pounds of lead in him. I imagined that I felt like Frankenstein, my legs were so heavy. I was so worried about it that I couldn't get the relief mentally that I wanted. I feel very dilated in the abdomen; it feels like I'm going to explode."

CASE 4.—A 59-year-old colored female with hypertensive heart disease, thiamin deficiency and hypoproteinemia, had massive edema of the lower and upper limbs, and of the trunk up to the shoulders. She described a feeling of tightness in the edematous parts. "(Your legs were quite swollen?) Yes. (How does that feel?) They feel tight and look tight, like a skin wrapped around something as tight as it could be. It don't look so healthy because they are too tight. (Did you think your legs would burst?) I have thought so; I really have. They were so tight I have thought they would burst, crack or something. (Did your belly get big too?) Yes. When it's swollen, it feels too tight. It seems to be something inside pulling. It must be the skin inside your stomach pulling. You know that tissue that holds your entrails. There should be some medicine that would cause this inside piece to expand. (Did you think your belly would burst?) I have thought so, but now it's coming down."

It is seen that patients with edema consistently have certain, specific ideas about their bodily deformity, and that these ideas are colored by an unpleasant affective tone. When in the course of the illness, the influence of the unpleasant emotions and of the faulty circulatory, respiratory and metabolic support of the brain, perhaps combined with the effect of a toxin, is sufficient to cause impaired sensory perception and to bring about a break between the ego and the environment, then a psychosis appears which is strongly colored by these ideas of unpleasant emotional tone. Just as the patients' thoughts about their edema are relatively consistent and uniform, so the ensuing psychoses are characterized by certain features which repeatedly make their appearance, and which are readily interpreted and understood in the light of the original, unpleasant ideas.

In the content of the psychosis there is revealed a tendency to disown the edematous and disfigured parts of the body, and to direct the attention elsewhere. One patient who discussed the swelling of her legs at great length, when asked how they looked, said, "I didn't look at them; I wasn't interested to look at them." Another said about her edematous feet, "They felt like putty and as though they didn't belong to me." This tendency to disown parts of the body subsequently involves parts which are not edematous.

There then becomes apparent a tendency on the part of the patient to misinterpret bodily sensations coming from the edematous areas, and to attribute these sensations, in paranoid fashion, to the activities of those in the environment.

CASE 5.—A 41-year-old white female with rheumatic heart disease, enlarged liver, ascites and edema of the legs, discussed her rectal sensations as follows. "Some of the girls by mistake put a thermometer in. Then they put in another. I think they put it there for a joke. They broke into tiny pieces but most of it came out." Another patient (Case 6) with enlarged liver and distended abdomen, when asked about her abdomen, said, "You can push in anything."

This proclivity to develop delusional ideas concerning the actions of others directed to the patient's body spreads to involve parts which are not edematous.

The most vivid and characteristic feature of the content of the psychosis consists of ideas that the patient is being dismembered, cut to pieces, mutilated by incised and punctured wounds, eviscerated and otherwise injured. These ideas are obviously related to the original fear that parts of the body will burst, and the pattern makes itself apparent in various forms. It enlarges its scope to include fears of impending catastrophe to, and multilation of the bodies of the patient's loved ones, and then may spread to all people. The patient will lose his material possessions as well as his body. All people and objects are seen by the patient as things to be dismembered, torn apart and disrupted. A few typical examples of such psychotic productions follow.

CASE 7.—A 70-year-old white female, with arteriosclerotic and hypertensive heart disease, pulmonary congestion, enlarged liver and edema of the legs, feared that she had donated her body and a sum of money to the hospital, and that she was to be skinned and eviscerated. She said, "I was so discouraged during the night that my husband didn't come, that I went and signed my body to Bellevue. Listen, does the hospital have any claim on me? I didn't give it to them yet. I was to give them $700 and give them my body too. Look on my feet—they marked it already. They marked it like cattle. I gave consent for that, but I'm sorry now. They want to kill me for cattle and they use the outside. They take the skin off; you know how. I'm not a butcher; a butcher will tell you more. I want you to stop it. They skin the bodies and they take the insides out. On the X-ray, everything is marked on the X-ray how the inside is. That means something. Some of the insides are good and they use it for other people, on live people, whatever they can use. The skin is not worth anything. It's an old skin. See how nice I talk about my skin. The way they take live people like cattle. You can't imagine what they do. I think after they are killed, they work on them. Maybe they cut your hands or feet off. They could use them. Old legs are not worth much. If they are good they can use them for other people. (Do you think it's because they are swollen, that your legs are not good?) Because they are swollen they are no good, but I wouldn't give it to them."

CASE 8.—A 77-year-old white female, with hypoproteinemia, had marked edema of the lower limbs extending over the sacrum, and some edema of the hands. She thought that her property, her sons and all knowledge had been lost, and that the world had come to an end. She said, "No more world, no more, no more, no more. It's happened and that's all. Can't you see I'm naked? I have nothing on my body. I don't know nothing. (Why is there no more world?) I don't know. It's so, I tell you. (What will happen to you?) What will happen to the world, will happen to me. The world is out. Everybody will have to study again. There are no doctors, no judges, no nothing. I know it. I have two sons; I don't know where they are. No place where to take me. There is nothing, nothing, nothing. There are no people, no life, nothing. You need a few thousand dollars to bury me and there is nothing. There is not a penny. There isn't any place to bury any one. What can you do with so many dead ones? Maybe everybody has been drowned."

Another patient (Case 3), who was particularly fearful that parts of her body would burst due to the presence of edema fluid, continually expressed this fear in her psychosis, and projected this fate onto her husband, so that in her hallucinations she actually saw her husband being blown up by gas so that his body burst open. She also feared the loss of her property. She said, "I don't want my head to burst open. I feel as though my eyes were going to pop out of my head. I fear that we will wind up very poor. (Why?) I don't know. I feel that my husband will become incapacitated (the patient's fear about herself). I want to be able to work. I look terrible. I'm emaciated; nothing will help. I'm so sick; my heart is broken in two. My flesh is falling off. I smell the same gas with which they tried to kill my husband. I don't want all the patients and nurses to get killed. My heat made my heart split in two. I burn inside. The blood boiled in my head and it burst. That's why I'm so confused. Did you break my spine? My spine feels broken in two. My lips contracted during the night and I couldn't open them this morning. During the day my body seems to swell and during the night it contracts. My brain is injected. It's going to burst open and the brains will blow apart, and then I'll die. The circulation is filling up my hands. They're heavy and I'm dropping dead. It seemed that there was a gas tank there and they

opened my husband's back and they used the gas on him. First they shot at him. I was lying there and looking at it. (Why did they shoot at your husband?) He was supposed to have committed some terrible crime, and he was judged for it. (What was the gas used on him for?) To throw him overboard, throw him in the water. It seemed that they completely got rid of him. They shot him to bits and then it opened up his back because he was shot so terrible. It was gas in a tank; the gas blew him open. The gas was in his back, blew him open. He died."

The last mentioned patient showed the mechanism of projecting into others her bodily sensations due to the edema, and her concept of her altered body image. This mechanism is frequently seen. Case 2 had delirious experiences in which a doctor demonstrated his methods of treating patients. She said, "One night people were ill and they were trying to explain the way they cured them. Sally, the black girl, was supposed to get money to show that she could take it. She had a suit that was covered with water all the time."

CASE 9.—A 45-year-old Polish female with rheumatic heart disease, right pleural effusion, hepato- and splenomegaly, and marked edema of the lower limbs, sacrum and buttocks, feared that not only was she herself to be dismembered and put to death, but that her relatives, friends and all other people were being killed. She said, "They are shooting the whole world full of people. Why they make these people suffer? I can't understand for what. Do they have to shoot the people? What for they shoot my husband, my boy, for what? Now I got to go to the electric chair. They kill so many people for nothing. I hear the shooting. I had visitors and they shot them. What are these people guilty of? I want to see some of my people. Then I will be quiet and get better. They brought me here to suffer. (Do your legs appear swollen?) They feel quite good. They have to chop them off anyhow. (How do your hands feel?) They feel alright to be cut off. My body is going to be thrown into the water or into the electric chair."

It is remarkable how thoroughly the thought content of these patients is dominated by ideas of tearing, splitting, breaking and disrupting processes. When one of them (Case 3) was asked to do some clay modeling, she made a flower in two parts, and said, "I made this tulip; it is broken in two." Another patient (Case 5) told a relative to get away from the wall because the wall was full of holes, that hands were coming through the holes, and that they might grab him. Their visual hallucinations consist of fragmented objects, or objects repeated in series. One patient (Case 3) said, "I saw a row of crosses. In the bed I saw sort of creeping animals. I even saw them home, small crabs." Another patient (Case 10) said, "I saw different things flying around, stars in the room, flying in the sky. A whole lot of people marching around, things like that." Another patient (Case 11) saw "all kinds of spots, stripes." In the auditory sphere the hallucinations frequently consist of repetitive sounds, like the sound of shooting, or of phrases being repeated over and over again.

COMMENT

It is seen that the psychoses occurring in edematous patients have a characteristic content which is determined by the distortion of the body image. This distortion of the body image gives rise to ideas which are always of unpleasant affective quality. In discussing the postural model of the body and the phantom of amputated limbs, Schilder(3) says, "All this shows that there are central processes going on in connection with narcissistic wishes. These insure that the patient feels the body as it has been before and especially those parts of the body which mean something for the individual. We know that, for instance, the erotic significance of the hand is much greater than the erotic significance of the forearm." The erotic significance of the feet and legs, the parts most frequently affected by edema, is also great. Schilder(4) further states, "Many things going on in our body are repressed when they do not fit into the postural model of the body we have." Accordingly it is easy to understand the tendency of edematous patients to repress the knowledge of the distortion of the body image, and particularly, such distressing thoughts as those of parts of their body bursting.

Once this repression has come into effect, the patient attributes the damage to his body and the unusual somatic sensations to the acts of those in his environment. When this mechanism of projection has come into action, the patient no longer says that he is losing his edematous limbs because they are bursting, but because they are being cut off by some one else. The fear of damage to parts of the body radiates to include not only the edematous, but also the non-edematous parts. Schilder(5) has stated, "Another important feature is the compara-

tive looseness with which the single parts of the body are connected with each other. It is obvious that limbs and trunk can go their separate ways; and that . . . . psychological dismembering can take place." The vivid and florid content of the psychoses, accompanied by great emotional display, is accounted for by the displacement of affect from the particularly distressing fear that parts of the body are bursting and being rent asunder. The great emotional value of this fear is attested by the fact that it dominates the content of the psychosis, so that the patient is constantly making reference to splitting, cutting and breaking processes. Even his hallucinations are fragmented.

Schilder(6) has demonstrated the close relation between one's own body image and the body images of others. He says, "We may push our own body-images completely into others, or in some way there may be a continuous interplay between the body-images of ourselves and the persons around us. This interplay may be an interplay of parts or of wholes." Consequently, fears concerning the safety of one's own body soon multiply into fears for the safety of loved ones and then of all people. When the psychotic, edematous patient fears that his own body is being destroyed, he also frequently expresses fears for the safety of all mankind. Moreover, as he loses parts of his body, he also loses his other material possessions. Schilder(7) says, "But there is no question that our own body can exist only as a part of the world. . . . . We have shown clearly that we do not perceive our own body differently from objects in the outside world. . . . . Body and world are experiences which are correlated with each other." The peculiar disfigurement of the body image due to the presence of edema, giving rise to the fear that the body will burst, leads the psychotic patient to the conclusion that his emotional and material worlds are being devastated.

Conclusion

Distortion of the body image due to the presence of edema consistently gives rise to ideas of unpleasant emotional tone. There is a tendency to reject and disown the edematous parts of the body, to repress the knowledge of the distortion of the body image, and to project onto others the responsibility for the disfigurement of the body and the unusual somatic sensations. The fear that parts of the body will burst ultimately leads the edematous, psychotic patient to the conclusions that his body is being injured, that all people are being killed, and that the material world is being demolished. Ideas of bursting, cutting, exploding and other disruptive processes constantly recur in the content of the psychoses. These are the dominant themes characteristic of the psychoses which occur in edematous patients.

BIBLIOGRAPHY

1. Bender, L. Psychoses associated with somatic diseases that distort the body structure. Arch. Neurol. and Psychiat., **32**: 1000, Nov., 1934.

2. Ibid.

3. Schilder, P. Brain and personality. Nervous and Mental Disease Monograph Series No. 53. Nervous and Mental Disease Publishing Company, New York and Washington, 1931, p. 55.

4. Schilder, P. Brain and personality, p. 63.

5. Schilder, P. The image and appearance of the human body, p. 114. Kegan Paul, Trench, Trübner & Co. Ltd., London, 1935.

6. Schilder, P. Ibid., p. 235.

7. Schilder, P. Ibid., pp. 122-123.

A NOTE ON THE INCIDENCE OF MENTAL DISEASE IN THE STATE OF NEW YORK [1]

CHRISTOPHER TIETZE, M. D.

Estimating the chances that certain events will occur at an unspecified time during a person's life span is a familiar problem for vital and medical statisticians. In most cases it is solved by multiplying age- and sex-specific annual incidence rates by the number of years lived in each age period by a cohort of males or females as given in the life table, and adding the products.

Thus the chance of acquiring syphilis was calculated in Germany by F. Prinzing(1) from the returns of the survey of venereal disease taken in 1927. His results were 70 per 1000 for males and 56 per 1000 for females. In this country a similar investigation(2) stands behind the "one in ten" formulated by Surgeon General Parran.

The expectation of eventual admission to a hospital for mental disease was computed by Pollock and Malzberg(3) from data on first admissions in the State of New York during the triennium 1919 to 1921. Later the Metropolitan Life Insurance Company published in its bulletin(4) similar figures for both New York and Massachusetts based on the period 1929 to 1931. The whole material has been summarized by H. F. Dorn(5) in Public Health Reports. All these studies indicated an expectation of eventual admission of about 50 per 1000 or one in twenty.

These investigations command great interest. If the assumption is correct that in communities with an adequate and well established system of mental hospitals the great majority of psychotics find their way into institutions at some time during their lives, even though they spend part of their periods of illness on the outside, then the expectation of admission to a mental hospital may be considered a fair measure of the incidence of psychosis as a whole. If the additional proposition is accepted that the primary diagnosis as a rule correctly indicates the further course and final outcome of the case, then it becomes possible to estimate separately the incidence of each group of psychoses from data on first admissions. Inasmuch as reality falls short of these assumptions the total incidence rate for the aggregate of all psychoses will be a minimum figure and the numerical relationships between the diagnostic groupings will be distorted.

It is believed that the conditions indicated above are approached in New York which at the same time offers the advantages of a large population. The present paper is based on first admissions in that State published by the Department of Mental Hygiene in its two latest reports covering the fiscal years ending June 30, 1940 and 1941(6, 7). For administrative reasons these reports distinguish three types of hospitals for mental disease. These are the civil state hospitals, the hospitals for the criminal insane, and the licensed institutions. The latter group includes some hospitals operated by the federal government and the Veterans' Administration and all private establishments. In 1941 for the first time all first admissions to licensed institutions were included in the annual report, whereas in earlier years the data had been limited to committed cases. As a result the recorded number of first admissions to licensed institutions jumped from 428 in 1940 to 2,161 in 1941. For the purposes of this paper it was assumed that there was no change between the two years; in other words the number of first admissions to licensed institutions in 1941 was substituted for 1940. Table I illustrates this procedure. In view of the great preponderance of the civil state hospitals it is obvious that no large error was thereby introduced.

Table II presents estimates for the more important groupings in the official system of classification. Here again the numbers of first admissions to licensed institutions in 1941 have also been used for 1940. The

[1] From the Mental Hygiene Study of the Eastern Health District in Baltimore, The Johns Hopkins University School of Hygiene and Public Health.

The Mental Hygiene Study is supported by the International Health Division of the Rockefeller Foundation.

comparatively small and very heterogeneous group of cases without psychosis is not presented on its own merits but for the benefit of those who may wish to subtract this class from the total.

The reports of the Department of Mental Hygiene contain information about age at admission only for the civil state hospitals. For a complete picture it is necessary to extrapolate this age distribution to the other types of hospitals. This was done for each diagnostic group separately and the distribution for the aggregate of all cases obtained by addition.

TABLE I

ESTIMATE OF FIRST ADMISSIONS TO ALL MENTAL HOSPITALS IN NEW YORK STATE, 1940-41, BY SEX

	Males	Females	Both sexes
Civil State hospitals			
1940	6,833	6,156	12,989
1941	7,021	6,442	13,463
Hospitals for criminal insane			
1940	218	10	228
1941	220	14	234
Licensed institutions			
1940 (estimate)	1,011	1,150	2,161
1941	1,011	1,150	2,161
Total for 1940-41.	16,314	14,922	31,236

TABLE II

FIRST ADMISSIONS TO ALL MENTAL HOSPITALS IN NEW YORK STATE, 1940-41, BY DIAGNOSIS AND SEX

	Males	Females	Both sexes
General paresis	1,389	442	1,831
Alcoholic psychoses	1,744	383	2,127
Cerebral arteriosclerosis	3,094	2,667	5,761
Senile	1,319	1,878	3,197
Involutional	592	1,425	2,017
Psychoneuroses	717	875	1,592
Manic-depressive	761	1,536	2,297
Dementia præcox	3,767	3,791	7,558
Other psychoses	2,239	1,644	3,883
Without psychosis	692	281	973
Total	16,314	14,922	31,236

The assumption that the age distribution of first admissions to private hospitals and to institutions for veterans or for the criminal insane is the same as that found for the civil state hospitals is probably not quite correct, even if the comparison is limited to a fairly narrow diagnostic class. It is altogether possible that the estimates made were sometimes too high or too low for certain age groups. These errors, however, would counterbalance each other almost completely in computing the expectation. In this connection it is pointed out that the civil state hospitals received the following percentages of all first admissions:

Senile	95
Cerebral arteriosclerosis	94
General paresis	94
Dementia præcox	89
Alcoholic psychoses	86
Involutional	81
"Other psychoses"	79
Manic-depressive	67
Psychoneuroses	58
Without psychosis	55

It is clear that a high percentage of admissions to civil state hospitals leaves little room for errors by faulty estimates.

TABLE III

RATES OF FIRST ADMISSIONS TO ALL MENTAL HOSPITALS IN NEW YORK STATE, 1940-41, PER 100,000 CORRESPONDING GENERAL POPULATION BY AGE AND SEX

Age group	Males	Females	Both sexes
0-14	10	4	7
15-19	64	53	59
20-24	106	82	94
25-29	111	101	106
30-34	119	106	112
35-39	128	120	124
40-44	130	115	123
45-49	134	130	132
50-54	158	149	154
55-59	178	151	165
60-64	227	177	202
65-69	291	242	266
70 and over	541	478	506
All ages	122	110	116

In Table III age-specific annual rates of first admissions are given, computed from the estimated age distribution of all cases and the population data of the 1940 census which was taken only three months before the midpoint of the period of observation. The table presents a familiar picture. The rates increase with age steeply and almost uninterruptedly. The only exception is seen in the female sex where the rate is lower for the age group 40-44 than for the preceding quinquennium; it is statistically not significant. The male rate exceeds the female

rate at all ages, the excess ranging—beyond the age of 15 years—between 3 and 29 per cent.

In addition to age-specific rates the determination of the chances of eventual admission to a mental hospital requires an appropriate life table. The life table used for this paper was computed by the abridged Reed-Merrell method from the deaths and the census population of 1940. In passing it may be mentioned that this table indicates an average future life time at birth of 62.9 years for males and 67.3 years for females.

Table IV presents the expectation of eventual admission to a mental hospital for the

TABLE IV

CHANCES OF EVENTUAL ADMISSION TO A MENTAL HOSPITAL BY DIAGNOSIS AND SEX. RATES PER 1000 BORN, NEW YORK STATE, 1940-41

	Males	Females	Both sexes
General paresis	6.5	2.1	4.4
Alcoholic psychoses	8.0	1.9	5.0
Cerebral arteriosclerosis	21.1	21.0	21.1
Senile	10.4	17.2	13.7
Involutional	3.0	7.4	5.1
Psychoneuroses	3.2	4.1	3.6
Manic-depressive	3.3	6.8	5.0
Dementia præcox	15.8	16.1	16.0
Other psychoses	10.6	8.1	9.4
Without psychosis	3.1	1.3	2.3
Total	85.0	86.0	85.5

aggregate of all cases and for each of the major diagnostic groups distinguished in Table II.

For both sexes and all diagnoses combined the expectation is 85.5 per 1000 born or more than one in twelve. This value exceeds strikingly the hitherto generally accepted ratio of one in twenty. There are at least three causes responsible for this increase. First, the inclusion of all cases admitted to licensed institutions, whereas the earlier figures had covered only court commitments. This accounts for an increase of about 12 per cent. Second, the improvement of mortality conditions during the last decade which has added about six years or 10 per cent to the average future life time at birth. More people than previously reach the ages susceptible to mental illness. Third, a considerable and rather rapid rise in age-specific rates of first admission has taken place. Whether this is due to a true increase in the incidence of mental illness or merely to liberalization of admission practice cannot be determined now. The present writer inclines toward the latter interpretation.

Although the age-specific rates of first admissions are uniformly higher among men than among women, the expectation of eventual admission is slightly higher at birth for the female than for the male sex. This is of course due to the longer average duration of life among females.

Turning now to the diagnostic groups shown separately in Table IV we find that the two psychoses of advanced age—cerebral arteriosclerosis and senile—account for about two-fifths of the total expectation for both sexes combined; dementia præcox for almost one-fifth; involutional, manic-depressive, and alcoholic psychoses together with general paresis for a little over one-fifth; and the remainder for the last fifth. The same general distribution, though somewhat distorted, is found for each sex separately. The expectation of eventual admission appears markedly higher among males than among females for alcoholic psychoses, general paresis, and "other psychoses" while the opposite is true for the involutional, manic-depressive, and senile psychoses and for the psychoneuroses. Virtually no sex difference is noted for cerebral arteriosclerosis and dementia præcox.

It has been suggested earlier that the expectation of eventual admission under a given diagnosis may under certain conditions be interpreted as indicating the true incidence of that form of mental disorder. It is believed that these conditions are most nearly fulfilled in the case of general paresis. Diagnostic criteria are more firmly established for general paresis than for most other psychoses and the advantages of modern fever therapy are known well enough to make early hospitalization accepted practice. The rates for the senile psychoses and cerebral arteriosclerosis, on the other hand, are likely to be deficient because it is apparent that a number of mild cases are cared for in their homes and that death often intervenes before commitment becomes necessary.

Psychoneurotics who require or receive

institutional treatment represent only a small percentage of the total incidence of these conditions.

An expectation of eventual admission to a mental hospital of .85 per 1000 and in particular with schizophrenia of 16 per 1000 are somewhat terrifying. There is reason to believe, however, that the incidence of mental illness in New York State is elevated above the national average by the high degree of urbanization of the state and by the presence of many migrants, both interstate and intercontinental, among whom mental disease tends to appear oftener than in more stable populations. Whether the metropolis has a specific attraction for prepsychotic "schizoid" personalities is a fascinating subject for speculation.

BIBLIOGRAPHY

1. Prinzing, Friedrich. Handbuch der medizinischen Statistik, p. 319 f. Jena, 1931.

2. Vonderlehr, R. A., and Usilton, Lida J. The chance of acquiring syphilis and the frequency of its disastrous outcome. Venereal Disease Information, **19**: 396-404, Nov. 1939.

3. Pollock, H. M., and Malzberg, B. Expectation of mental disease. Psychiatric Quart., **2**: 549-579, Oct. 1928.

4. Anon. The chances of becoming mentally ill. Metropolitan Life Insurance Company Statistical Bulletin, **18**(7): 5-8, July 1937.

5. Dorn, H. F. The incidence and future expectancy of mental disease. Public Health Reports, **53**: 1991-2004, Nov. 1938.

6. State of New York, Fifty-Second Annual Report of the Department of Mental Hygiene. Albany, 1941.

7. State of New York, Fifty-Third Annual Report of the Department of Mental Hygiene. Albany, 1942.

PHYSIOLOGICAL REACTIONS OF PSYCHOTICS TO EXPERIMENTALLY INDUCED DISPLACEMENT[1]

G. L. FREEMAN AND J. H. PATHMAN, CHICAGO, ILL.

In a previous study by the writers(6), evidence from normal subjects suggested an inverse relation between the rate of internal physiological recovery from displacing stimulation and the amount of its externalized expression or overt discharge. Those individuals who recovered internal equilibrium quickly (as indicated by a return of palmar skin conductance measures toward a pre-stimulus base) tended to show a high degree of externalized activity (as indicated by increased restless movements during stimulation). Since one of the alleged factors in psychoneurosis and psychotic disorder is a discrepancy between the energy aroused by stimulation and its adequate external expression, our experimental methods have herein been extended to the reactions of representative psychotic groups.

PROCEDURES

The patients included in this study were 15 manic-depressives and 11 dementia præcox cases from the Elgin State Hospital.[2] The cases were carefully selected upon the basis of giving no evidence of lesions of the central nervous system and of having a diagnosis on which the whole psychiatric staff was agreed. These patients were tested individually for their reactions to sensory stimulation (unexpected pistol shot) and to ideational stimulation (a word list of high emotional value).

The experimental measures included changes in palmar skin conductance and changes in the patient's gross restless movements as he lay on the cot.[3] The changes were recorded at minute intervals before, during, and after the experimental stimulations. As with the previous studies on normal subjects, the standard procedure was to (a) rest the patient until his palmar skin conductance showed no major fluctuation for a period of five minutes, (b) introduce the emotionally displacing stimulation on this "basal" activity of rest, and (c) observe the rate of return of palmar skin conductance and movement measures from the peak levels reached during stimulation.

The sensory stimulation (pistol shot) requires no comment. Ideational stimulation (the word association tests) was designed to arouse or reinforce existing personal conflicts to a point where they could effect changes in the physiological excitation level of the subject. The method involved questioning the patient about his sex life, familial relations, major source of anxiety, etc., without permitting overt answer and then requiring free association to a related list of words. In the treatment of results which follows, the bodily changes produced by this ideational stimulation are treated as a unit; that is, the average palmar skin conductance and movement changes for the entire displacement period (b) are treated as analogous to the shorter displacement effect of the sensory stimulation.

RESULTS

The psychotic patients showed a rise in palmar skin conductance from a basal level (A) to a peak level (B) during both types of experimental displacement, and with cessation of the external stimuli this measure of internal arousal tended to drop to a post-test level (C). From this homeostatic response curve two significant quantitative measures were derived(1), the conductance increment or arousal factor, C.I. $= \frac{(B-A)}{(A)}$,

[1] From Northwestern University, Evanston, Ill., and the Institute for Juvenile Research, Chicago, Ill.

[2] In this connection we wish to thank especially Dr. C. E. Read, Dr. P. Whitman, and Mr. A. Mayer for use of facilities and other assistance.

[3] The palmar skin conductance changes were recorded by use of the "behavior research resistance box" and the bodily movements were recorded by means of an electromechanical counter attached to the cot on which the subject lay. Readers will recall that conductance is the reciprocal of resistance in the galvanic skin response (*cf.* 4).

and the conductance recovery quotient or recovery factor, R.Q.$= \frac{B-C}{B-A}$. A related set of data derived from the curve ($A'B'C'$) of restless movement responses showed the significance of movement increments or the overt discharge factor, M.I.$= \frac{(B'-A')}{A'}$. The remainder of this report deals with the inter-relations of the measures of arousal, recovery, and discharge in the two psychotic groups and with a comparison of the inter-relations for psychotics with those holding for a normal group of subjects who took the same tests.

It will he helpful if we recall that the previously reported work with normal subjects indicated a tendency for those who discharged aroused bodily energies most overtly and directly to recover internal equilibrium the more rapidly. Several hypotheses suggest themselves in the extension of this finding to the psychotic group. Each hypothesis is discussed separately. The statistical checks are given in Table I in terms of t tests of significance of the difference between means and f tests of significance of the difference in variability of groups.

Hypothesis I.—Psychotics will be distinguished from normal subjects in terms of "basal" physiological activity levels.

Hypothesis Rejected.—While there is already considerable negative evidence against it, the notion persists that psychotic patients will live on a higher or lower "energy level" than normal subjects. But as can be seen from the first column of Table I, the groups compared are not significantly differentiated with regard to our measure of physiological activity level (basal skin conductance). This result adds support to the point made elsewhere (2, 4) that static measures of physiological activity fail to yield significant correlations with psychotic disorders. The approach should be through derived measures of dynamic change, such as are employed in the remainder of this report.

TABLE I

STATISTICAL SIGNIFICANCE OF DIFFERENCES IN PSYCHOTIC AND NORMAL REACTION TO EXPERIMENTAL DISPLACEMENTS

Groups compared, Variables	Resting activity level, B.C.L.	Reactions to sensory stimulation			Reactions to ideational (i) stimulation		
		M.I.	C.I.	R. Q.	M.I.	C.I.	R. Q.
Normals and Psychotics ($df = 23$)	$t = 1.64$	$t = 1.01$	$t = 1.18$	$t = 1.29$	$t = 1.50$	$t = 0.04$	$t = 1.77$
($df = 25$)	$f = 1.65$	*$f = 26.0$*	*$f = 2.84$*	*$f = 2.91$*	*$f = 23.3$*	*$f = 3.14$*	*$f = 6.29$*
Manic and Schizophrenics ($df = 14$)	$t = 1.25$	$t = 1.124$	$t = 1.45$	$t = 1.74$	$t = 1.36$	$t = 1.48$	$t = 0.95$
($df = \mathrm{df} = 10$)	$f = 2.57$	*$f = 1.976$*	*$f = 5.74$*	*$f = 2.27$*	*$f = 11.05$*	*$f = 4.7$*	*$f = 5.25$*
Normals and Schizophrenics ($df = 23$)	$t = 0.483$	$t = 0.756$	$t = 1.49$	$t = 1.7$	$t = 0.03$	$t = 0.04$	$t = 0.87$
($df = 10$)	$f = 1.19$	*$f = 44.8$*	*$f = 3.52$*	*$f = 1.79$*	*$f = 4.87$*	*$f = 1.48$*	*$f = 4.44$*
Normals and Manics ($df = 23$)	$t = 2.03$	$t = 1.43$	$t = 0.18$	$t = 0.07$	$t = 2.35$	*$t = 22.9$*	$t = 1.80$
($df = 14$)	$f = 2.15$	*$f = 44.1$*	*$f = 1.63$*	*$f = 1.35$*	*$f = 38.4$*	*$f = 3.59$*	*$f = 3.38$*

Differences and variance ratios judged significant in terms of Fisher's 1 per cent level t and f tests (*Cf.* Linquist, Statistical Analysis in Educational Research, 1940) are set in italics. Degrees of freedom (df) allowed in these comparisons are given for each group compared.

Hypothesis II.—Schizophrenics will show less internal arousal and overt discharge than normal subjects.

Hypothesis Rejected.—Although schizophrenics are supposedly more "withdrawn" than either normal or manic patients, the data from experimental displacement tests show no significant difference between the conductance increment (C.I.) scores of schizo-

phrenics and normal or manic patients. This means that so far as internal arousal is concerned, the schizophrenic group is as responsive as normal subjects to sensory and ideational stimuli. Furthermore the average overt movement discharge (M.I.) score of the group is no less than that of normals or manics.

Hypothesis III.—Manics will show greater internal arousal and greater overt discharge than normal subjects.

Hypothesis Sustained.—The significant *t* difference between manic and normal groups indicates that manics were more physiologically aroused by ideational stimulation than the normal subjects. Furthermore the difference between the average overt discharge for manic and normal groups approached statistical significance. Analysis of the individual cases shows that the most extensive motor discharges during stimulation were made by manics and that, as a group, they gave more variable *M.I.* scores than did the normal group.

The fact that hypothesis III is supported whereas its logical corollary (hypothesis II) is denied calls for comment. We are inclined to rationalize this apparent discrepancy as due to the overlap of the physiological measures in normal and schizophrenic groups, especially for ideational displacements. This is in agreement with many previous failures to differentiate schizophrenics and normals by physiological means (1) and points to the need for some more dynamic measure of physiological differentiation than any heretofore applied. Such a measure might be found in the *R. Q.*, or the ratio of arousal to recovery in a homeostatic response curve.

Hypothesis IV.—Schizophrenics and manic patients have defective neuromuscular homeostasis and therefore will show lower physiological recovery quotients than normal subjects.

Hypothesis Rejected.—Lower *R. Q.'s* were not found for psychotics, but failure to confirm this hypothesis need not be taken as evidence against the diagnostic value of *R. Q.* measures. The fact that there is a significant variance-ratio (*f* test) between *R. Q.* scores for normal and psychotic groups indicates that the *R. Q.* measure has some differentiating value. Furthermore, it might be that only psychoneurotics (not psychotics) would show low recovery on experimental displacement tests. Another complicating factor may be the relation of recovery to amount and mode of discharge. It will be recalled that our method measures only one type of discharge. The previous work showed that, among normal subjects, those who discharged aroused tension most directly (*via* skeletal movements) recovered internal equilibrium most quickly. The application of this principle to the present data is given in the next two hypotheses.

Hypothesis V.—Psychotic patients as a group are more variable in their degree of arousal to stimulation and in their methods of discharging tensions.

Hypothesis Sustained.—It can be seen by reference to Table I that, in most cases, the variability of arousal, discharge and recovery measures significantly differentiates the normal and psychotic groups. Thus on the arousal factor (*C.I.*) there was a very significant difference between the highly variable scores of the schizophrenic group and the less variable scores of the manics. The difference in variability between normals and schizophrenics was not as statistically significant as the difference between normal and manics. Significant differences in variability were also found between *R. Q.* scores of normal and psychotic groups, but the most significant differences in group variability occurred in connection with the movement increment (*M.I.*) scores.

The relative variability of normal and psychotic groups with regard to the movement increment or discharge factor is especially interesting when taken in relation to the variability of the groups on the arousal factor. We find that the manics who were least variable as regards arousal were most variable as regards discharge; and the schizophrenics who were most variable as regards the arousal factor were least variable in amount of motor discharge. We would interpret this as indicating that as groups, manics tend toward overdischarge in displacing situations whereas schizophrenics tend toward underdischarge. The schizophrenic adjusts by building up higher thresholds and narrowing the range of effective stimuli and if

a vulnerable spot is found his response will be more like that of the normal. The manic, on the other hand, adjusts not by the 'barricade' method but by indulging himself in complete release and often overdischarges his tensions.

It is not known if these group differences in variability are symptomatic of the day to day variability of individual members who compose a given group. If this were the case then variability of physiological arousal and discharge on the same test taken at different times would be of diagnostic value. We should expect, however, that psychotics would be less variable as individuals than as a group. While there is much variability between psychotics, each particular patient is likely to be more stereotyped and physiologically rigid in his reactions than is a normal subject. Psychoneurotics would probably be more variable as individuals than normal subjects. If this hypothesis was supported, a single test would have most predictive value when used on a psychotic, less on a normal, and least of all on a psychoneurotic.[4]

Hypothesis VI.—Since psychotic patients are presumptively more variable in their methods of discharging aroused tensions than are normal subjects the correlation between *R. Q.* and *M.I.* scores will be less for this group than that for normals.

Hypothesis Sustained.—The significant difference in the variability of normal and psychotic groups may be taken as evidence for the supposition that normal subjects show more outward similarity in methods of discharging the experimentally induced excitement than do psychotics. Consequently for normal subjects the correlation between internal recovery and the direct skeletal discharge of tension was found to be relatively high (0.54). For psychotic groups (maniacs plus schizophrenics) the average correlation was only 0.01. This probably means that psychotics as a group are taking more indirect and unrecorded means of discharge (on the verbal or phantasy level) than are normals. However, since the low correlation of 0.01 was obtained for the average of both tests, it is possible that schizophrenics and manics are differentially affected by the sensory and ideational displacements. This possibility is tested in the next hypothesis.

Hypothesis VII.—Ideational and sensory displacement will effect arousal and recovery factors differentially in manic and schizophrenic patients.

Hypothesis Sustained.—It is often assumed that schizophrenic patients will be most easily affected by sensory stimulation whereas manic patients can be more easily affected by ideational stimulation. The schizophrenic who is greatly concerned with his own inner thoughts is sometimes unresponsive to verbal stimulation, whereas the manic is responsive to all types of stimulation. Some confirmation of this distinction appears in the fact that on the ideational test manics who discharge the most overtly (by gross skeletal movements) recover internal equilibrium most quickly (r=.51), whereas on the sensory test, schizophrenics who discharge most overtly recover most rapidly (r=.53).

No significant relation between discharge and recovery was found for manics on sensory displacement or schizophrenics on ideational displacement. The full import of this distinction will be seen by inspection of Table II. It should also be noted (in Table I) that on all measures the ideational displacement test tends to differentiate the manics from other groups, while the schizophrenics tend to show a higher differention (*f ratios*) on the basis of the sensory test.

The first suggestion covering these reversal effects would seek a difference between the groups in arousal and discharge factors. We have seen that this does not hold, for one group mobilized and discharged as much as another irrespective of the test situation. To explain the reversal effect we shall probably have to study the patterning of discharge in reference to the total dynamic situation. In the ideational displace-

[4] In the study of normal subjects day to day variability in physiological measures was found to be positively related to other indices of neurotic tendency. It is unfortunate that the present study of psychotic groups utilized but one period of experimental displacement. Further work should certainly observe the physiological reactions over a more extended period of time. This procedure is now recognized as essential to early diagnosis of cardiac disorder, where a given electrocardiogram may be within normal limits but where the variation from day to day may go beyond the normal range and so indicate disfunction(2).

ment, the prevailing mode of manic discharge was in accord with the motor type which we measured, whereas for the schizophrenic group other mechanisms of discharge (such as ideo-motor phantasy) might have been utilized instead of the movements which we recorded. The reason why skeletal muscular discharge did correlate with internal recovery for the schizophrenic group on the sensory or startle displacement is not so apparent. However, it may be that the habitual idea-motor discharges of this group were so much more inappropriate for the sensory than for the ideational displacement, that only those schizophrenic subjects who "broke through" to skeletal discharge show physiological recovery from experimental displacement. The zero relationship between skeletal discharge and internal recovery of manics on the sensory test may be the product of a reflex nature of discharge in some individuals and of the inhibition of discharge in others. In summary, we are inclined to believe that the differentiation of psychotic groups by our two tests is in large part an artifact, caused by the limited measures of behavioral discharge which were used.

Hypothesis VIII.—Physiological reactions to experimentally induced displacement will be more diagnostic of the duration of a psychosis, than of its classification.

Hypothesis Sustained.—On the assumption that our physiological measures might show more significant relations to the duration of psychosis than to the clinical classification, the case records were examined with this in mind. Table II shows little relationship between duration of psychosis and *R. Q.* scores; but the arousal and discharge factors give correlations with duration of psychosis which approach significance. The most significant relation is a negative one between duration of psychosis and degree of physiological arousal (*C.I.*). This was true for both types of displacement and was further accentuated when the group was broken down into the two clinical classifications. It appears thus that the longer the duration of the psychosis the less "energy" the patient has at his disposal in meeting new stimulation. This finding has important implications, particularly as justification for shock therapy. Such treatment is known to work best on psychoses of short duration, and apparently aids the patient to "break through" and meet the external situation in a more adequate fashion by increasing or reorganizing his patterns of energy mobilization.

TABLE II

CORRELATONS BETWEEN MEASURES OF PHYSIOLOGICAL REACTION BY PSYCHOTIC GROUPS

Measures compared	For ideational stimulation			To sensory stimulation		
	Manics	Schiz.	All	Manics	Schiz.	All
R. Q. and M.I.	0.51	0	0.01	0	0.53	0.01
Duration (of psychosis) and R. Q.	0.29	0.46	0.40	0.34	0.07	0.02
Duration and M.I.	0.50	−0.48	0.19	0.19	−0.52	−0.16
Duration and C.I.	−0.54	−0.20	−0.31	−0.43	−0.10	−0.27

Some support is lent to the clinical differentia between the manic and schizophrenic groups by the correlation between duration of psychosis and the amount of skeletal muscular discharge recorded in our tests. That is, with manics, the longer the history of the psychosis, the greater the tendency for skeletal discharge in displacing situations, while, for schizophrenics, the longer the psychosis the less the discharge (due to inhibition?).

DISCUSSION

The data reported in this study may be evaluated best in relation to previous work upon the general hypothesis that all behavior is homeostatic-regulatory(5). Just as more limited organ systems (such as circulation of the blood) are known to react to a disturbing condition (such as a decreased oxygen supply) in a way that will bring about a restoration of the prexisting constant state, so the organism as a whole reacts to displacing stimulation in a manner calculated to

restore internal equilibrium. Individuals have been found to differ in their rate of reestablishment of internal equilibrium and in their manner of overt performance during the homeostatic sequence(5), and this pattern seems to be fairly consistent from situation to situation(3). Normal subjects rated most neurotic tend to show a high degree of internal arousal and low homeostatic-recovery(5). This lack of recovery is thought to be due to a discrepancy between internal arousal and its external discharge. By means of discharging aroused bodily energies, overt behavior functions to maintain the homeostatic balance of the total organism. While many kinds of behavior, including skeletal, verbo-motor, and ideo-motor (phantasy), may be used together or singly in the discharge of aroused excitation, it is thought that skeletal reaction is the most direct means of discharge(6). All forms of response are conceived as attempts at homeostatic adjustment.

In the light of such principles our present results would seem to indicate that the behavior patterns of psychotics may not be considered as poor adjustment from the standpoint of physiological homeostasis. While psychotic behaviors are socially unacceptable, this does not prevent their being physiologically equilibrating. Considered as groups, psychotic and normal subjects both appear to equilibrate experimental displacements with equal ease; hence the reactions of each group might be considered as a type of homeostatic adjustment. The fact that the psychotic groups were found to be more variable than normal subjects in both degree of physiological arousal and discharge suggests a greater range of homeostatic adjustment level among psychotics. But on the whole, the group should not be considered as physiologically unbalanced. Rather, psychotics should be regarded as having achieved uncommon and bizarre methods of equilibration. It is generally recognized that when certain of the more natural channels of discharging aroused energies are blocked, other methods for the release of tension will tend to develop. Such substitute discharge methods will meet with little success at first. But by continued use, such adjustments as the melancholic, the persecuted, etc., are perfected to the point where they dominate the total behavior flux. Homeostatic equilibration is thus achieved by a reaction pattern of considerable rigidity and low discriminative character; that is, by reacting in a given way to all stimuli, their exciting effects are physiologically equilibrated. The true psychotic is not concerned whether or not his reactions are acceptable to those about him. Theoretically at least, the bizarre behavior of the psychotic is as physiologically equilibrating as is the commonly accepted reaction of the normal subject. The normal subject is not reexcited by his behavior because he recognizes it as meeting the standards of general acceptability. The psychotic is not reexcited by an unacceptable behavior pattern because he has lost contact with reality.

It is just here that we should expect the psychoneurotic to be most easily distinguished from both normal and psychotic personalities. The psychoneurotic is usually thought of as torn between alternative moods of discharging aroused tension. He is apprehensive lest his behavior be considered "abnormal" and is full of anxiety over his conflicting reaction tendencies. Physiologically, we should expect the psychoneurotic to be less homeostatically adjusted and more labile than either the normal or psychotic subject. He would be characterized as an aroused person who had not accepted a satisfactory equilibratory discharge mechanism—in other words, as making a persistent nonadjustive response. Experimental displacement tests similar to those given herein might conceivably show lower physiological recovery (*R. Q.*) for a psychoneurotic group. Certain results with the so-called 'normal' group are in this direction. However, a more crucial test would be to see if definite psychoneurotics (operationally defined as those seeing a psychiatrist) have patterns of physiological arousal and discharge distinct from the normal and psychotic groups. The authors endeavored to obtain a large enough sample of such psychoneurotics to include their reactions in the present analysis. However, there was hardly any cooperation from such patients and we can only say that the four cases examined had significantly lower recovery, higher arousal, and more variable

scores than our normal or psychotic groups. It is hoped that other researchers will find means to secure a more adequate sample.

BIBLIOGRAPHY

1. Brown, J. F. Psycho-dynamics of abnormal behavior, p. 323. New York, McGraw Hill, 1940.

2. Dunbar, E. F. Emotions and bodily changes (2nd ed.). New York, Columbia University Press, 1938.

3. Freeman, G. L. Toward a psychiatric plimsoll mark; physiological recovery quotients in experimentally induced frustrations. J. Psychol., **8**: 274-292, 1939.

4. Freeman, G. L., and Katzoff, E. T. Methodological evaluation of the galvanic skin response, with special reference to the formula for R. Q. (recovery quotient). J. Exper. Psychol., **31**: 239-248, 1942.

5. Freeman, G. L., and Katzoff, E. T., Individual differences in physiological reaction to emotional stimulation. J. Exper. Psychol., **31**: 527-537, 1942.

6. Freeman, G. L., and Pathman, J. H. The relation of overt muscular discharge to physiological recovery from experimentally induced displacements. J. Exper. Psychol., **30**: 161-174, 1942.

PROCEEDINGS OF SOCIETIES[1]

Report of the Committee on the History of Psychiatry and the Editorial Board of the Centenary Volume

Your committee and the Editorial Board of the Centenary Volume have been working in concert and therefore are submitting herewith a joint report, as they did at the meeting of the Council during their last Christmas session.

In our last report we called attention to the fact that in 1915-17 "The Institutional Care of the Insane in the United States and Canada" was published under the auspices of the Association, and that in 1885 a small volume entitled "The Original Thirteen" appeared from the pen of Dr. John Curwen, then Secretary of the Association. In the opinion of the committee it is of some value from time to time to call the attention of our membership to old publications of this kind, thus stimulating interest in our history and in that of our specialty. We are confident that in due course of time it will become possible for the committee to engage the interest of many of our members who through the pages of our Journal and other publications remind us regularly of the various steps and problems involved in our evolution as a medical organization and discipline. We may recall here, as an instance worth recording, Dr. John Curwen's history of our Association covering the first thirty years of its existence, published in 1875.

The above-mentioned material and other data have been put at the disposal of the various contributors now engaged in writing the Centenary Volume.

These contributors have all been doing the necessary research and writing, and barring exceptional circumstances the manuscripts will be on the editors' desks this summer or early this coming autumn.

One of our contributors, Albert Deutsch, was called into the Armed Forces. The Board and the committee wish to express their deep appreciation of Albert Deutsch's industry and of his loyalty to the Association. Despite extremely limited time and pressing circumstances involved in joining the Armed Forces, Mr. Deutsch not only completed his assignment for the volume but also prepared on his own initiative a good bibliography on psychiatry during the Civil War, which the Board put at the disposal of Professor Arthur C. Cole of Western Reserve University. Professor Cole is working on a chapter dealing with this page of our history for the Centenary Volume.

The Board has been working in full harmony with the Editor of our Journal, and we decided to offer the Journal the use of some of the gravure plates which are being prepared for the volume. The Board is happy to make this contribution. There has been no need for any special committee to serve as a liaison group between the Journal and the Board.

We have almost completed the collection of illustrations for the volume. We were fortunate in finding a number of good portraits, some of which have not been published before. The Board wishes to acknowledge the kindness and cooperation of a number of our members. We wish to make particular mention of Dr. Archibald Malloch, the Librarian of the New York Academy of Medicine, who gave us a great deal of his time and effort, and of Franklin B. Kirkbride, the son of one of the founders and of the first Secretary of our Association, who has been especially responsive to our needs for a number of data and who never hesitated to give us as much of his time as we asked for. Among other things, Mr. Kirkbride put at our disposal a photostatic copy of an editorial written in "The Medical Times" (Philadelphia) on the occasion of Isaac Ray's death.

The Board had no especial expenditures to make, except that we deemed it advisable to pay the expenses of Albert Deutsch, who had to spend about a week in Washington in connection with his research for his chapter, at a considerable personal sacrifice, before reporting for induction into the army.

No definite steps have as yet been made in connection with our library since last December, when the Council authorized the committee to bring into order the books now in our possession. It was deemed advisable to wait until the annual meeting, when the additional recommendations which are to follow would be submitted to the Executive Committee and the Council.

As we have done in previous reports, we wish to call the attention of the Council to certain historical events of which we ought in our opinion to take proper cognizance. December 24, 1945, will be the two hundredth anniversary of Benjamin Rush's birthday. The one hundredth anniversary of Horace Well's great contribution to anesthesia falls in the same year. We would recommend that, in cooperation with the Programme Committee, a special form of celebrating these two events by the Association be adopted.

Since the Centenary Committee has not yet been fully organized, our recommendation as to an exhibition of books and pictures, adopted by the Council at the last meeting, has not yet been submitted; this will be done as soon as the Centenary Committee convenes. We now submit the following suggestion, which we would wish to add to the previous ones. The Committee on the History of Psychiatry deems it worth while to consider the preparation of a plaque which could be affixed to the building which now stands in the place of the Jones Hotel, in which the first official meeting of the Association was held.

The money for this plaque could be disbursed from the earmarked funds of the Committee on

[1] The following Reports of Committees, which formed a part of the Proceedings published in the September issue of the Journal, were received too late for inclusion in that number.

the History of Psychiatry, which has about six hundred dollars of the original sum of three thousand five hundred dollars. Of this sum of approximately six hundred dollars, over two hundred represent the amount received for advance sales of the Centenary Volume, part of which will have in due course to be turned over to the Columbia University Press.

The committee is happy to report that a cheque of two thousand dollars was received since our last report in December. The donor expressed the wish in forwarding the cheque that no publicity be attached to this gift. The President of the Association was at the time informed of the amount donated and of its source. The committee would wish to use these two thousand dollars earmarked for its work to establish a central, good reference library of The American Psychiatric Association. This brings up the question of housing and managing the library. A special memorandum was submitted to the Executive Committee dealing with this problem.

Respectfully submitted,

GREGORY ZILBOORG, M. D., *Chairman,*
J. K. HALL, M. D., *General Editor.*

REPORT OF THE COMMITTEE ON LEGAL ASPECTS OF PSYCHIATRY

The Committee on Legal Aspects of Psychiatry has held two official meetings and correspondence has been carried on with those members of the committee who could not attend. The first of these meetings was held May 18, 1942 and the second was held at the Pennsylvania Hotel in New York on February 22, 1943.

The committee has been concerned with the problem of delinquency and crime among the members of the military forces and the methods used in dealing with the offenders. From reports that have come to some of us, it appears that there is a lack of the scientific point of view in dealing with them and a great shortage of properly trained psychiatrists. Attention is called to the experiences of the armed forces in the first World War and the report and description of crime groups which appeared in the section on Neuropsychiatry, Vol. 10, page 131, in the Report of the Medical Department of the United States Army.

The committee feels that this report offers a minimum starting point and has concerned itself with the problems which are listed in this group as follows:

Crimes of acquisitiveness, as larceny, robbery forgery, etc.
Sex crimes of all description.
Crimes of violence, such as assault, fighting, murder.
Purely military crimes, such as absence without leave, desertion, escape, sleeping on post, drunk on post, discredit to uniform, and allowing escape of prisoners.
Military crimes of an aggressive nature, such as disrespect to an officer, mutiny, disobedience of orders, and insubordination.
Disloyalty, disloyal statements, disrespect to the United States.
Conscientious objector of the religious type.
Conscientious objector of the political type.
Conscientious objector because of being alien enemies, of having alien enemy relations, of non-citizenship and other like draft irregularities.

It was the consensus of opinion of the committee that it is expected of the army and navy administrations to supply the same quality of psychiatric services as are available in civilian life to the end that the present military services will be maintained and improved and to apply modern methods in so far as it is practicable. In order to advise intelligently, it was agreed that it would be necessary to study the methods now in use with offenders against the civilian laws as well as the military laws. For this to be effective, it seemed best to have a joint committee of psychiatrists from civilian life and officers from the Navy and Army forces. A letter containing a resolution to this effect was drafted and was sent to the Secretary of The American Psychiatric Association and is embodied in this report as follows:

February 25, 1943.

Dr. Winfred Overholser, Secretary
The American Psychiatric Association
St. Elizabeths Hospital
Washington, D. C.

DEAR DR. OVERHOLSER:

The Committee on Legal Aspects of Psychiatry is fully aware, on the basis of its data obtained from various sources, that psychiatric problems as they relate to principles of law and discipline in the armed forces of the United States require thorough understanding in order to improve the efficiency of this branch of our activities.

The Committee solicits the sympathetic consideration of the following proposal: That a subcommittee of the Committee on Legal Aspects of Psychiatry be especially detailed for this purpose and be joined by three members of the psychiatric services of the Army and Navy to make an immediate survey of the psychiatric aspects of the various problems involved in major and minor offenses which occur daily in the armed forces, the survey to be completed in the shortest possible time by this joint group and be submitted to the Council of the American Psychiatric Association and the psychiatric services of the Army and Navy.

It is the hope and wish of the Committee that we may thus most intelligently contribute to the war effort.

Yours very truly,
PAUL L. SCHROEDER, M. D.,
Chairman, Committee on
Legal Aspects of Psychiatry.

This resolution is herewith presented to the Council for consideration.

Because of the urgency of the problem stated above, the committee decided that it should make this its first concern and leave for later action its work on other phases of legal aspects of psychiatry.

Respectfully submitted,
PAUL L. SCHROEDER, M. D., *Chairman,*
Legal Aspects of Psychiatry.

May 9, 1943.

Report of the Committee on Psychiatry in Medical Education

The Committee on Psychiatry in Medical Education wishes to present the following summary of its activities during the past year for the consideration of council.

1. During 1942 the fifth post-graduate institute was conducted at St. Joseph, Missouri, with a medical personnel enrollment of 76 and an additional enrollment of allied professional workers (nurses, social service workers, etc.) of 95. Complete reports of this institute have been distributed to each member of the Council as well as to each enrollee of the institute.

2. The sixth post-graduate institute, scheduled for the San Antonio State Hospital, was not held, although many of the phases in its organization had been completed by your committee. The general shortage on the staffs of our various hospitals, due to the large number of psychiatrists entering the military service, made it inadvisable to conduct this institute.

3. Questionnaires have been sent out to all the teachers of psychiatry in our medical schools and their answers indicate that 179, or 32.2%, of our teachers are now in the military service and an additional 18% plan to seek commissions or are available for military duties. This is a very creditable record and is a real tribute to our association and the splendid backing our medical schools are giving the war effort.

4. Questionnaires have been sent to all of the physicians who have taken the courses as well as to the faculty, the returns from which indicate that our experiment in post-graduate education has been well received and that the opinion was unanimous for the continuation of these institutes after the war.

5. The set of neuropathological slides has been ultilized by thirty-four men during the past year. The illustrated syllabus is now being completed and will be available to each member of our association soon.

6. It is recommended to the Council that during the war years our committee be available to act in an advisory capacity to the various Army service commands inaugurating post-graduate programs. Such a plan will enable those members of the committee who have been declared essential for the home front to contribute very materially to a much-needed program of post-graduate medical education for physicians in the armed forces.

7. Your committee wishes to express appreciation to the Rockefeller Foundation for making possible five institutes during the years 1940, 1941, and 1942. The chairman of the committee, as instructed by council last year, had an interview with Dr. Alan Gregg, Director of the Division of Medical Sciences of the Rockefeller Foundation, was favorably received, and was advised to submit application for further subsidies. The war interfered with plans, and it was decided to postpone this work to a later date.

Respectfully submitted,

Franklin G. Ebaugh, M. D., *Chairman*,
John M. Whitehorn, M. D.,
Baldwin L. Keyes, M. D.,
Harry A. Steckel, M. D.,
John Romano, M. D.

Report of the Committee on Research

Owing to the difficulties of transportation and the occupation of various members of the Committee with all kinds of work, there was no meeting of the Committee on Research during the past year. Consequently, there is nothing new to report.

The Chairman, however, wishes to state that as delegate of the American Psychiatric Association to the National Research Council, he has listened in on three meetings of this Council, the last one being held on April 29, 1943. Out of this attendance certain facts emerge:

The National Research Council has several pieces of work which are going on for neuropsychiatry. In view of the enormous importance of neuropsychiatry in this present war and in communal life in general, it seems to me that some effort should be made to organize researches which the Council can carry out or which some other body can prosecute and especially during the war. A golden opportunity presents itself for the study of the epidemiology of nervous, mental and hybrid diseases not easily classified but at present relegated to neuropsychiatry in the work of the various induction boards. Any person who does work in the induction stations notes at once that different communities and different social groups present quite different types of nervous and mental disabilities. In other words, the ecology of such disabilities as alcoholism, feeblemindedness, crime, etc., present themselves in relationship to the various draft board areas in a way which offers us a magnificent opportunity to see the relationship between cultural, racial, economic and social factors and the various types of nervous and mental disability for which men are rejected from the Army.

I realize that some of this work is going on, but I doubt if it has been organized. It seems to me it should be. Unfortunately, such work cannot be done without some grant of money so that various induction stations could work together with a standardized technique in collecting data of rejection and relating these data to the factors mentioned above.

Respectfully submitted,

Abraham Myerson, M. D., *Chairman.*

May 4, 1943.

CASE REPORTS

ONE CASE OF CALCIFIED PERICARDITIS AND TWO CASES WITH A HISTORY OF SEVERE CORONARY PATHOLOGY UNDER INSULIN AND ELECTRIC SHOCK THERAPY[1]

Case 1.—White male, age 23. In March 1943, patient showed all typical symptoms of a schizophrenic psychosis with catatonic and paranoid features. X-ray of the chest showed the heart to be encased by an about ½ inch thick wall of calcified tissue. In 1933, patient had undergone a two-stage cardiolysis for adhesive pericarditis. His selective service classification was 4-F. The psychosis did not respond to conservative treatment. When patient's physical condition was approaching exhaustion, he was placed on insulin and electric shock treatment, and received 66 insulin treatments with 48 coma reactions, 39 electric shock treatments with 39 epileptiform convulsions. At no time was there any evidence of cardiovascular embarrassment during or after shock treatment.

Case 2.—White male, age 55. In January 1943, patient was admitted with an involutional depression, agitated type. Thirteen months prior to admission, he had suffered from an infarction of the myocardium due to arteriosclerotic coronary thrombosis (EKG-diagnosis). Clinical diagnosis was coronary embolism. On admission here he complained of anginal pains in the precordial region. Sedimentation rate was elevated. Under conservative treatment the psychosis did not improve, and patient's physical condition was approaching exhaustion. For two weeks then, he was placed on subcoma-doses of insulin, and kept in hypoglycemia for 4 hours 5 times a week. No evidence of cardiovascular embarrassment was encountered. Coma was then introduced and gradually increased to one hour. During this stage, occasional dyspnea during and after the coma reaction responded immediately to aminophyllin intravenously. The sedimentation rate went down to normal. The anginal symptoms disappeared. The depressive symptoms remained rather stationary, though the agitation had greatly improved. Electric shock then was added. After 3 electric shock treatments, patient was in a state of remission. He received a total of 38 insulin treatments with 25 coma reactions and 9 electric shock treatments with 9 convulsions.

Case 3.—White male, age 59, classified as manic-depressive psychosis, depressed type; fourth attack. The essential physical factors were almost identical with those of case 2, with the exception that patient's sedimentation rate was normal on admission, and his eyegrounds showed advanced peripheral arteriosclerosis. He received 48 insulin treatments with 30 coma reactions and 15 electric shock treatments with 15 convulsions. At the end of the electric shock series, patient became considerably confused, and for about 3 weeks showed marked defects of his memory both for recent and remote events. Under the administration of high doses of thiamin chloride and nicotinic acid, these symptoms cleared up.

Comment

Case 1.—To our knowledge, this is the first publication of a case of calcifying pericarditis undergoing shock treatments. The fact that such a case withstood the strain of these treatments without cardiovascular embarrassment suggests that the functional reserve of the heart is perhaps higher than usually thought in such cases.

Case 2.—The physiological basis for our preparation of patients with a history of coronary pathology for shock treatments by subcoma doses of insulin, along with the administration of glucose, is summarized in Martin's "Dextrose Therapy." Apparently the stimulability of the carbohydrate metabolism of the heart muscle by insulin, and the tendency of insulin and dextrose to remove pre-existing fatty deposits in the heart or

[1] From the Insulin Department of the New Jersey State Hospital.

fatty accumulations in the early atheromatous processes in the coronary vessels, are the important factors. Both patients had a normal blood pressure and normal blood chemistry, blood-count and urine. Due to the wartime lack of trained personnel, electrocardiographic studies could not be made.

Electric shock was given 3 times a week, insulin 5 times a week. The electro-convulsions were induced at the beginning of the 4th hour of hypoglycemia, regardless of the coexistence of coma.

In conclusion, it is emphasized, that we are well aware of the risks involved. We feel, however, that in psychoses of the type described, the alternate danger is death from exhaustion. A preparatory, "experimental" stage of treatment with insulin and glucose, routine administration of vitamin preparations and the judicious use of cardiovascular and central stimulants may enable us to give selected patients with cardiac pathology the benefit of shock treatments.

WALTER STRAUS, M. D.,
Trenton, N. J.

COMMENT

THE KILGORE BILL

Much interest has been aroused among scientific workers by the bill introduced in the Senate of the United States by Senator Kilgore of West Virginia for the avowed purpose "to mobilize the scientific and technical resources of the nation." The American Association for the Advancement of Science has registered its strong opposition to the provisions of this bill through a resolution of its Council, published in *Science*, August 6. In a letter to *Science* in the August 13 issue, the author represents his wish "to free technology for the greater advancement of the American people." He also expresses the desire, which he feels will be implemented by the bill, for widespread financial support by the government to basic research.

Great opposition has been expressed against the political organization of the projected "Committee," "Board" and "Administrator" to whom it is proposed that enormous powers be granted for the control of scientific and technological personnel, patents, processes and priorities. On the Board of seven, it is proposed to have two "scientists or technologists"; on the Committee of about thirty, three additional "scientists or technologists"; but these apparent assurances of some scientific insight and guidance in their decisions is rendered ridiculous by the definition, here quoted verbatim from the provisions of the bill:

> SEC. 2 (b).—Scientific and technical personnel shall include all persons, excepting physicians and dentists, who have completed any course of study in any college or university in any branch of science or its application or who have had not less than an aggregate of six months' training or employment in any scientific or technical vocation.

Such a definition, in combination with the proposed organization, may represent the Senator's conception of democratizing science by legislative action; but, if so, it reveals a disturbing failure to appreciate the wide difference which distinguishes the trained capacity for scientific thought from the mere taking of a course.

Senator Kilgore seems quite unaware of certain historical steps which have actually served in times of national emergency, past and present, to bring the aid of scientific workers to the service of the nation. Lincoln and the Congress chartered the National Academy of Sciences in 1863 to assist the government in the war then raging between the states. Wilson called upon the National Academy of Sciences to establish the National Research Council to assist the government in organizing the scientific resources of the country for its need at that time (1916), and in recognition of war-time effectiveness and potential peace-time value this organization was perpetuated by an executive order of May 11, 1918. Roosevelt, through the Office of Scientific and Research Development, and the National Roster of Scientific and Specialized Personnel, has effectively supplemented these organizations in the present situation. The many men of science who are familiar by personal experience with the operation of these voluntary scientific aides to the nation know well the integrity, the scientific abilities and the devoted service of those serving in these agencies. The necessities of military secrecy prevent any public presentation of the effective services already performed and now in progress. It seems preposterous to substitute for these agencies a coordinating "Board" of nonscientific persons, leavened by a couple of "scientists or technologists" defined (with physicians and dentists excluded) as anyone who may have worked six months in a chemical laboratory or other scientific or technical vocation or have taken one college course in "any branch of science or its application."

The earnest Senator, although aiming at noble purposes, appears unduly fearful of the domination of science by commercial interests. Out of this fear, he proposes to obliterate the effective agencies, tested by time and trial, which now serve to coordinate for the

government highly technical and scientifically creative work in many university and research centers, and would substitute, for this coordinating purpose, a hastily conceived political board, with an absurdly minimal scientific representation and insight, but endowed with enormous powers over all scientific and technical personnel, all property used in research, and all "agencies or establishments" (including any corporation, association, school, college or university), with blanket authority to "promulgate rules and regulations which shall have the force and effect of law."

The Kilgore bill (S. 702) has been referred to the Senate Committee on Military Affairs. The American Association for the Advancement of Science has expressed its opposition in urgent but respectful terms and in specific detail. Others convinced of the unsound form and undesirable provisions of this bill should likewise indicate their opposition.

J. C. W.

SELECTIVE SERVICE SYSTEM PROGRAM

Many of the members of the Association serve regularly as examiners at Armed Forces Induction Stations. A few have been fortunate enough to work in areas where local organizations have arranged to provide the examiner with social and medical historical data on those draftees who present themselves for induction. Far more, however, have had to depend upon the history as given by the draftee himself, only rarely corroborated, perhaps, with a letter from a physician. Obviously, the lack of outside information has resulted in the acceptance of many men who should have been rejected, and undoubtedly in occasional instances in unnecessary rejection. Certainly, every psychiatrist at the induction centres has felt strongly that the lack of facilities for providing pertinent information was a serious defect in the selective process.

In July 1943 Dr. Raymond W. Waggoner was appointed Psychiatric Consultant to Selective Service (a position unfortunately vacant ever since Dr. Harry Stack Sullivan's resignation in November 1941). With the support of Col. Leonard Rowntree, Chief of the Medical Division, Doctor Waggoner has worked out detailed plans for the securing of the desired information, a plan which has now been promulgated (October 18, 1943) as Medical Circular No. 4.

In brief the plan provides for the appointment of one or more volunteer "medical field agents" for each local board, to be provided by the local social or health agencies. A separate form (DSS Form 212) is made out by the local board with each registrant's identifying data. This form is then completed by the field agent. Five fields of inquiry are called for—(1) school record (performance, behavior); (2) adjustment to work (inadequacy, level of performance, frequent change of jobs, etc.); (3) health (14 different items, such as convulsions, enuresis, head injuries, diabetes, heart disease, asthma, gastric ulcer); (4) personality or mental disorders (16 items, among them overdependence, seclusiveness, alcoholism, vagrancy, court record, treatment for mental disorder in institution or out); and (5) history of members of family (mental defect, epilepsy, alcoholism). This information, indicated by a check mark in the "yes" or "no" column, with amplifying remarks on the reverse of the form if called for, is forwarded *in a sealed envelope* to the local board, and by them, still sealed, to the induction station before the draftee appears for examination. The information is for the use only of the induction board examiner or of the medical advisory board if the local board refers to that body any registrant at whose rejection the local board is aggrieved. In this manner the information is kept confidential and is not subject to the draftee's inspection. The data are finally filed at State Headquarters.

Additional machinery is set up to provide the examiner with the evaluation of the draftee by his secondary school teachers. This form (DSS Form 213) is filled out preferably by five of the potential draftee's teachers when he leaves school provided he is 15 years of age or over. The answers,

given by check marks (three choices rather than "yes" or "no"), cover school work, attendance, decisiveness, participation in physical activities, response from classmates, attitude toward teachers, dependability, personality characteristics, and certain physical difficulties. Such information should be of value in assessing the candidate's personality, and will frequently reveal assets rather than liabilities.

It is unfortunate that the original program set up by Doctor Sullivan was abandoned just as the demands on Selective Service were becoming heavier, and that the present plan comes into operation only after many millions of our boys have been inducted. Nevertheless, great credit is due to Colonel Rowntree and Doctor Waggoner for putting this procedure into operation on a national scale. It cannot help being a valuable aid to the induction board psychiatrists, and of benefit to the draftee and the Services alike.

THE NEED OF COMMISSIONING THE GRADUATE PSYCHIATRIC NURSE

Long before World War I a number of excellent nurse training schools in this country were training male psychiatric nurses. At the time of the last war there were many young men who had graduated from well qualified schools, stood extremely well in their classes and had passed State Board of Registration examinations in a number of our states. These men were eager to serve their country and naturally anxious to do it in the field for which they were best qualified. At that time attempts were made to have these men commissioned but were not successful. Many of them went overseas with hospital units and did outstanding work.

In the present war we learn that there is a great shortage of trained nurses. We also know that approximately one-third of all the casualties are neuropsychiatric ones. Therefore, the need for the psychiatric nurse is most urgent. Women, who were long discriminated against as regards commissions, are now commissioned. In a democracy do we not support the thesis of equality and fair play?

Under the existing law, which uses the word "female" in regard to commissioning of nurses, there would have to be a slight modification to include men. In our opinion this should be done at once as a matter of justice to those with equal training and equal qualifications, and also because the need of all the available graduate male psychiatric nurses in the hospitals of this country and those in the zone of combat, is tremendous. What incentive is there left for a man to qualify himself as a psychiatric nurse if he is to have a status below women who were trained in the same school with him? In war or in peace there is a definite place for the well trained psychiatric male nurse. If special training is to have no measure of equality with women similarly trained, if when serving most effectively during war no proper recognition is given, how can we hope to continue the training of men in our schools of nursing?

If this injustice is to be continued we are threatened in the very near future with the closing of our schools which for so many years have been successfully training men.

We would thus lose a considerable number of trained nurses much needed during war and in the public health program of peacetime. The number of men involved is not great—probably four or five hundred—but these men are desperately needed and the continuation of the present injustice is hardly consistent with our standards of democracy or our encouragement of education of all who are qualified to benefit by it.

The oldest and largest national medical association should bend every effort to see that appropriate legislation is introduced at once and acted upon favorably to correct a serious situation of injustice and shortsightedness.

NEWS AND NOTES

DR. SOLOMON PROFESSOR OF PSYCHIATRY AT HARVARD.—Dr. Harry C. Solomon has been appointed professor of psychiatry in the Medical School of Harvard University and medical director of the Boston Psychopathic Hospital, to succeed the late Dr. C. Macfie Campbell in these two positions. Dr. Solomon graduated in medicine at Harvard in 1914, spent the next two years as resident at the Boston Psychopathic Hospital and has been on the teaching staff ever since. His long association with Dr. Campbell in the university and hospital and his important contributions as chief of therapeutic research at the latter institution, made him the logical choice to succeed his chief. It is gratifying to note that it was in Dr. Solomon's hands that Dr. Campbell wished to leave the continuation of the work he had carried on so splendidly and so long.

ARQUIVOS DE NEURO-PSIQUIATRIA.—Volume 1, No. 1, of this new South American publication appeared in June 1943. It is a quarterly journal published under the direction of the departments of neurology of the medical faculty of the University of São Paulo and of the Paulist School of Medicine. The scientific directors, Adherbal Tolosa and Paulino Longo, are the professors of the respective departments. The managing director of the new publication is Dr. Oswaldo Lange, docent of the neurological clinic in the University of São Paulo, to whom Professors Tolosa and Longo give the credit of launching the *Arquivos*. In addition to original articles there are sections devoted to society meetings, book reviews, scientific notices, etc. Each number will contain about one hundred pages.

The JOURNAL extends best wishes to the *Arquivos* as it starts on its career.

LEGISLATION RE PSYCHIATRIC PATIENTS IN CALIFORNIA.—Provision for dealing more effectively with defective and psychopathic delinquents is contained in a new law passed by the 1943 session of the California legislature authorizing a 90-day commitment of such persons for observation and diagnosis to determine indications for further disposal. If such a patient escapes, attempts to escape or commits an assault while escaping, he will be dealt with as having committed a misdemeanor.

It is anticipated that under the post-war construction program a separate institution will be erected to care for these patients. This is a step that other jurisdictions will follow with interest, since the constitutional psychopath is a menace to society, to his family and to himself for whose care or treatment hitherto no adequate legal provision has been made.

In promoting the extramural program that has already made so gratifying progress in California, a new maintenance rate not to exceed $35 per month is established for patients paroled to family care. This replaces the old rate of $25 and is in addition to incidental moneys, supplies or services furnished by the hospital to patients so paroled.

The 1943 legislation contains also new provisions for the psychiatric care of children. The state hospitals may now properly receive minors for observation and treatment. In addition, children appearing in juvenile courts, and whose mental health is in doubt, may be committed to a state hospital for observation for a period not to exceed 90 days.

Alcoholic addicts have not been overlooked. Under a new law the court may commit a chronic inebriate to a county road camp as an alternative to commitment to a state hospital. Hope is expressed that the courts will take full advantage of this authority not only for the benefit of patients but also for the relief of the state institutions.

PENNSYLVANIA PSYCHIATRIC SOCIETY.—The fifth annual dinner meeting of the Pennsylvania Psychiatric Society was held in Philadelphia October 7, 1943.

Mr. John Corcoran, noted radio news analyst, commentator and writer, spoke on the subject of "Today"; "The Referral Center for Selective Service in Philadelphia" was described by O. Spurgeon English, M. D.; the Presidential Address was delivered by George J. Wright, M. D., of Pittsburgh.

Officers for 1943-1944 were elected as follows:

Ralph L. Hill, M. D., President, Wernersville.
George W. Smeltz, M. D., President-Elect, Pittsburgh.
Councillors: Leslie R. Chamberlain, M. D., Danville; Theodore L. Dehne, M. D., Philadelphia; John N. Frederick, M. D., Pittsburgh; Ronald B. McIntosh, M. D., Selinsgrove; John F. Stouffer, M. D., Philadelphia; John I. Wiseman, M. D., Torrance; George J. Wright, M. D., Pittsburgh.
Auditors: Robert S. Bookhammer, M. D., Philadelphia; Gomer S. Llewelyn, M. D., Mayview; Howard K. Petry, M. D., Harrisburg.
LeRoy M. A. Maeder, M. D., Secretary-Treasurer, Chancellor Hall, 206 South Thirteenth Street, Philadelphia 7, Pa.

SEMINAR IN GENERAL SEMANTICS.—A seminar lecture-training course in general semantics will be given, Dec. 27 to Jan. 2, at the Institute of General Semantics in Chicago. Lectures and conferences with Count Korzybski and others are scheduled in afternoons and evenings.

Enrollment is limited to thirty. Tuition charge (including $10 registration fee) is fifty dollars. Information may be obtained from Miss M. Kendig, Educational Director, Institute of General Semantics, 1234 E. 56th St., Chicago 37, Ill.

HISTORICAL EXHIBITS AT THE PHILADELPHIA MEETING IN 1944.—An added feature of the Philadelphia Centennial Meeting will be an exhibition portraying one hundred years in American psychiatry, as reflected by the growth and development of the American Psychiatric Association. Members are asked to take part as exhibitors either by showing individual exhibits of an historical character or by lending to the Committee on Exhibits such old books, pictures, letters, or other memorabilia as might be of interest. All exhibits will be titled with acknowledgment of the source. A watchman will be provided by the Association. All those desirous of taking part in this feature of the meeting are asked to communicate immediately with Dr. Gregory Zilboorg, 14 E. 75th St., New York, N. Y., sending a description of the proposed historical exhibit or of the material which will be made available for the selection of the Committee.

BOOK REVIEWS

AUTONOMIC REGULATIONS. THEIR SIGNIFICANCE FOR PHYSIOLOGY, PSYCHOLOGY AND NEUROPSYCHIATRY. By *Ernst Gellhorn.* (New York: Interscience Publishers, Inc., 1943.)

If there are "must" books for neuropsychiatrists, this is one of them. One can only speak in superlatives of a book which gives at once a careful and a brilliant account of the interreactions between the autonomic nervous system and the central nervous system, as well as the relationship of very important general physiologic and experimental states to the autonomic system.

Thus, there is a thorough and clearly presented account of hypoglycemia, its relationship to anoxia, the changes that take place in the brain in hypoglycemic convulsions, the relationship of hypoglycemia to the sympathetico-adrenal system as well as to the vagal parasympathetic system. At the end of this chapter a very clear summary is given.

The same scheme is followed when the author discusses the literature and his own very pertinent experiments on the autonomic regulation of cerebral circulation. The adjustment reactions to hypercapnia, which is an exceedingly important matter, as well as the results and phenomena of anoxia, are placed in pertinent relationship to the problems of psychiatry, since these conditions have been used therapeutically in the psychoses.

A very fine section deals with the autonomic-endocrine integration, and here we are brought into close clinical contact with the nervous regulations of the hormones of the hypophysis, in which a detailed account of the activities of both the sympathetico-adrenal system and the vagal insulin system is given.

Part IV concerns itself with autonomic-somatic integration. The antagonism and the collaboration of autonomic factors and cerebral factors are brought clearly into focus. A good deal of experimental work is cited, including the carotid sinus reflex and somatic excitability, and especially the effect of carotid sinus reflexes on convulsions. The author skilfully weaves into the picture the fundamentals which he has discussed in the earlier parts of his book, of hypercapnia, anoxia, hypoglycemia into this section, which gives a very brilliant account of the autonomic and hypothalamic basis of emotion.

The sections on results and applications of autonomic nervous system physiology to neuropsychiatry, and especially the relationship to schizophrenia and convulsions, deserve the closest attention on the part of neuropsychiatrists. There is much work here which is unfamiliar to most neuropsychiatrists and which opens up avenues of research and therapeutic approach to our problems.

This book, like all human effort, has its defects. The reviewer believes that the author has not laid enough emphasis on autonomic chemistry and thus, to some extent, the brilliant work which has changed our concept of the nervous system from a system of cells and fibers with excitatory and inhibitory functions to a chemical factory is underemphasized. But each man has a right to select for himself the emphasis he shall give in so vast a field as that in which Dr. Gellhorn has worked so assiduously and so brilliantly. The reviewer wishes to express for himself, at any rate, a great debt of obligation to the author of this masterpiece of record and original experiment and most earnestly calls the attention of his fellow psychiatrists to a storehouse of information and a source of inspiration and further research.

A. MYERSON, M. D.,
Boston State Hospital,
Boston, Mass.

WAR WITHOUT INFLATION: THE PSYCHOLOGICAL APPROACH TO PROBLEMS OF INFLATION. By *George Katona.* (New York: Columbia University Press, 1942.)

Mr. Katona's theme is the true rôle of psychology in preventing inflation. Inflation is not brought about automatically in wartime by the increasing gap between the amount of money available for spending and the goods available for purchase. It is only the money spent and not the money earned that counts. How much of their income business men and consumers will spend depends upon their view of the whole situation and especially upon their expectations about the behavior of prices in the immediate future. If they are allowed to think that prices are bound to rise rapidly as in past wars and are stimulated further in that belief by salesmen and government spokesmen speaking unadvisedly they will spend fast and unrestrainedly and inflation is sure to take place. If, on the other hand, they are assured that steps are being taken to counteract the forces making for price rises and that government is confident of being able to meet these they will have less reason to spend; saving will then have a rational appeal and inflation may be prevented.

Arguing thus, he declares "There are two ways of fighting inflation. One is legislative and administrative action intended to curb the inflationary potential, the other a psychological campaign which gives clear orientation for understanding the economic events and the governmental measures, so that the people will respond to them in the appropriate way. The two methods are complementary. Economic and fiscal measures taken against inflation may fail if public response to them runs counter to their objectives, for example, if the reaction to price ceilings is withholding of goods or hoarding" (p. 198). He is apprehensive

on two counts about the offerings of his craft. In the first place there is too little application of psychological findings to economic theorizing and practice. The different disciplines of the social sciences have been carried on too much in separation and although most economists realize that it takes men and their decisions to put mechanisms such as inflation into operation they mostly avoid the examination of such matters as human attitudes and moods, assuming they "are not open to scientific investigation" (p. 6). In the second place and resulting partly from the first he feels that the application of psychology to the administration of the war economy suggests backwardness of theory and in many instances lack of imagination in techniques. Reiteration of slogans after the manner of commercial advertising, exhortations in the form of "don'ts," and unpatterned appeals to reduce standards of living should make way for explanation of the whole situation with positive instruction as to what the government is expecting from each individual or group. The public should be expected to learn by understanding rather than simply being conditioned through reiteration and association, and the matter to be understood should be arranged in relation to its context. The true function of saving should be explained, its different forms appraised and taxes should be devised partly to impress the people with the government's determination to fight inflation.

The above is the main thread of argument but the book lives in the illustrations, suggestions and detail. Among the best chapters are those on "Government Publicity" and on "Saving," the former concerned with techniques of learning and influencing public opinion, the latter with a search after appeals to induce people to save. The chapter on "The Consumer Facing Inflation" in which rationing is discounted as unpleasant and set aside in favor of "we, the consumers" acting rationally and equitably in the presence of goods known to be scarce, and indeed assisting the government through "explaining" the situation to each other, impressed the reviewer as overoptimistic. Experience in Canada has shown unfortunately how a grasping minority can spoil all such decent democratic intentions, and through hoarding the small amounts offered, turn the majority into an outraged crowd of all-day shoppers.

The book again is a partial treatise in the political economics of war with the analysis running tributary to the main thesis. At times the author, doubtful perhaps of the instruction of his audience, seems to lose sight of his task as a psychologist and to set about elucidating economic principles for themselves—thus the chapter on "Taxation." Incidentally he knows his way in the works of many of the modern and most competent economists—as witness his comment on them in the five page bibliographical note.

The volume is timely and should be widely read and not the least by medical men who by virtue of their profession are in constant contact with the public. For them the reviewer would like also to reverse the emphasis and hope that their education would in some degree prepare them to be economic as well as psychological advisers in these problems of citizenship.

The exposition and printing are excellent. The reading is interesting albeit somewhat repetitious.

H. A. Logan, Ph.D.,
University of Toronto.

The Year Book of Neurology, Psychiatry and Endocrinology for 1942. Edited by *H. H. Reese, Nolan D. C. Lewis and E. L. Sevringhaus.* (Chicago: Year Book Publishing Co., 1943.)

This volume continues to excel as an outstanding summary of the year's published work in neurology, psychiatry and endocrinology.

The section on neurology is edited by Dr. Hans Reese. Important contributions dealing with the anatomy, physiology and pathology are grouped together and although one obviously cannot review all the abstracts certain articles stand out as most important. The recent work on headache clearly emphasizes six basic patho-physiologic mechanisms. Neuropsychiatric syndromes related to toxoplasmic encephalomyelitis, lymphogranuloma venereum, ascending myelitis complicating measles, are described. There is much in the volume about electroencephalography, disorders of the muscular system and vitamins in relation to nervous and mental diseases.

The section on psychiatry, edited by Dr. Nolan D. C. Lewis, contains much material on the psychiatric problems related to war. There are very useful reviews of the nervous and mental effects of the sulfonamides, and studies of the problem of suicide. Under a subdivision concerning child psychiatry there are studies of the personality changes in behavior disorders in children following pertussis, emotional factors in bronchial asthma and recent work on amaurotic idiocy.

This is followed by special sections reviewing the year's published work in the organic and toxic psychoses, affective and schizophrenic reaction syndromes. Emphasis is given to newer correlations of the psychosomatic and psychoneurotic disorders. Of special interest in this work are the relations of emotions and leukocytosis, personality factors in the genesis of gastro-intestinal, cardiovascular and arthritic illness.

There are excellent surveys of problems of military psychiatry as related to the examination of the potential soldier, and the incidence of war neuroses in civilian and military groups.

The third section on endocrinology is edited by Dr. Elmer L. Sevringhaus and is laudably arranged with short editorial comment on recent advances in the field. Of especial interest in this section are descriptions of pituitary types of myxedema, studies of the blood iodine, brain metabolism and effects of x-ray on thyroid gland disturbances. The adreno-genital syndrome with special emphasis on studies of 17 ketosteroid me-

tabolism is of great importance. There is just warning against the subcutaneous or intramuscular implantation of astrogenic pellets. Consideration is given to aspects of the male climacterium.

All in all the volume is an excellent review of the 1942 year's work in these fields. The editors have done an excellent job of condensation, clarification and compilation. The volume should be a part of every neuropsychiatrist's library. It is highly recommended.

S. Bernard Wortis, M. D.,
Bellevue Hospital,
New York, New York.

Effects of Alcohol on the Individual: A Critical Exposition of Present Knowledge. Vol. I. Alcohol Addiction and Chronic Alcoholism. Edited on behalf of the Research Council on Problems of Alcohol. By *E. M. Jellinek.* (New Haven: Yale University Press, 1942.)

In the introduction the authors discuss the scope and method of their study. The number of articles reviewed was enormous. Their purpose was to collect facts in order to develop a program of research; to determine what gaps exist in research; and to analyze the existing literature to determine what conflicting opinions exist.

This volume is intended to be a clinical study devoted to the etiology and treatment of abnormal drinking, together with a report on the mental and bodily disorders of chronic alcoholism. Two subsequent volumes are intended—one on experimental data and one on statistics.

The authors properly stress the distinction between chronic alcoholism as a disease and alcoholic addiction as a cause of alcoholism—too often do physicians treating alcoholic patients refer to one when they mean the other. However, the distinction made by the authors between a primary addict and a secondary addict is not clear and its usefulness is not apparent. Another weakness is inherent in the problem itself. The broad lines of the etiology of alcoholic addiction are in categories that are themselves ill-defined such as constitution, heredity, personality, etc. It is difficult to understand why the poverty drinker should be classified as a true addict. It is also difficult to see a clear distinction between the discordant addict classified as a true addict and described as a schizoid personality for whom alcohol is the only means of temporary relief from conflict, and the symptomatic schizoid drinker who uses alcohol only as a means of breaking his seclusiveness.

Despite these criticisms, the authors have given good clinical descriptions of personality types of drinkers as culled from the literature and classified. One wonders, however, at the justification for the pronouncement that 40 per cent of abnormal drinkers are psychotic, psychopathic, or feebleminded.

One of the best sections of the book is that dealing with the alcoholic psychoses. There are excellent clinical descriptions, and numerous problems for future research are pointed out.

In the chapters dealing with vitamin deficiencies and encephalopathies there are excellent discussions of the nutritional problems, especially the relationship of thiamine deficiency to polyneuropathy. There is, however, no description of riboflavin deficiency or of vitamin A or C deficiency. The treatment dosage of vitamins in deficiency states is not given clearly. In the discussion of encephalopathies only the Wernicke and nicotinic acid deficiency types are described. Admittedly other types exist but there are no descriptions of such types, nor are there suggestions for research in this group.

The volume contains a long statistical analysis tending to show the relation of cirrhosis to chronic alcoholism but there is no discussion of the fatty liver which is admittedly the commonest liver disease. One also wonders why there was no consideration of the gastrointestinal disorders due to chronic alcoholism, especially gastritis.

In a volume of this nature it is difficult to determine how much material one should include and just which aspects should be stressed. It does seem that in greater part the aspirations of the authors have been fulfilled. It is hoped that the collection of clinical material and data will be used to clarify future research. The volume is recommended as valuable reading for the internist and the neuropsychiatrist.

Morris Herman, M. D.,
S. Bernard Wortis, M. D.,
Bellevue Hospital, New York, N. Y.

Mental Illness: A Guide for the Family. By *Edith M. Stern,* with the collaboration of *Dr. Samuel W. Hamilton.* (New York: The Commonwealth Fund, 1942.)

Mrs. Stern has previously published articles relating to mental illness that have received well deserved attention. In her contacts with mental hospitals she became disabused of the fear that many persons have of such organizations, and wished that she could present the facts of what was being done in hospitals to restore patients to normality. She was concerned that although books were written about how to run a household and how to bring up dogs, there was none telling people how to behave and what to do when someone falls mentally ill. The present book is written to fill such a need and to be a guide book for relatives.

In addition to combating common fallacies about mental illness and the handling of its victims, it offers practical advice on families' relations with the patient and with the hospital. Its aim is to give advice which psychiatrists, psychiatric nurses, and psychiatric social workers feel the need to give repeatedly to relatives, but for which they often do not have the time.

Chapter headings indicate the various topics treated: A Healthy Attitude Toward Mental Illness; When Mental Illness Strikes; Why Hospitalize?; Private or Public Hospital?; Getting the Patient Admitted; Taking the Patient to the Hospital; Leaving the Patient at the Hospital; The First Month in the Hospital; The Hospital World; Life in a Mental Hospital; Some Treatments for Mental Illness. Other chapters deal with matters

of letters and visits, attitude toward discharge, management of the patient returning home, and the question of permanent recovery or of continued care.

There is an appendix which lists the States which supervise private institutions for the mentally ill. Other appendices list the States which have various forms of admission procedures, those which have social workers connected with mental hospitals, and those which have made legal provisions for family care. The names and addresses of national and state mental hygiene committees are also given. The book ends with a glossary of terms which relatives might hear used in connection with patients or the hospital.

One feels certain that Dr. Samuel Hamilton with his wide experience with hospital procedures was of very material assistance to Mrs. Stern in compiling this guide. One can say without reservation that the purpose of the book has been admirably achieved. It contains well organized, concise, sound information which should be very helpful to any person who is faced with the problem of mental disorder. It is suggested that hospitals and private physicians might save much time and effort and the relatives derive much benefit if in every hospital and private psychiatrist's office one or more copies of this book could be made available for loan to relatives when they make their first contact with the hospital physician or other psychiatrist. Mrs. Stern's book presents facts in a manner that might be more easily understood by some relatives than most carefully formulated attempts at explanation by physicians. The author may be well assured that her book fills a distinct need that has been felt for a long time.

CLARENCE O. CHENEY, M. D.,
New York Hospital—Westchester Division,
White Plains, N. Y.

THE CREATIVE UNCONSCIOUS. By *Hanns Sachs*. (Cambridge, Mass.: Sci-Art Publishers, 1942.)

In reviewing such a book as "The Creative Unconscious" one must be careful not to permit his evaluation of the book to be too much swayed by his personal acceptance or rejection of the fundamental thesis of which the particular work is an elaboration. Though the logic of the arguments and the validity of the conclusions stand or fall very largely in terms of one's conviction of the reliability of the primary premise—that of the psychoanalytic concept—nevertheless Sachs has written an interest and thought provoking book.

To this non-psychoanalytic reviewer much of the argument appears spurious and many of the conclusions untenable.

Sachs makes two major contentions so far as literature, "the art of words," is concerned. The first is that poetry represents the repressed wishes of the author, these wishes being expressed in literary fancies so designed as to appeal to the unconscious of his audience and at the same time so as not to offend the (super-ego-censor) reader. This statement is applicable no doubt for many works of art, but certainly not for all, or even most. Often the wishes are expressed openly, consciously, explicitly; and their appeal is directly to the conscious. There is no single and simple (however esoteric the vocabulary) formula to which creative art can be reduced any more than there is *one* explanation for all the vagaries of human experience. Such a statement as: "Since unconscious repressed desires and wishes are essentially the same everywhere, we are all linked together by the bond of common guilt, and it matters little whether we call it by its Christian name of Original Sin or by the psychoanalytic term: Œdipus Complex" (p. 93) neither demonstrates *how* the repressed wishes of the author influence the unconscious of the reader nor throws any light on the blatantly unrepressed wishes of Walt Whitman or the overt, though lyrically expressed social idealism of Shelly's "Prometheus Unbound."

The second component of literature is, according to Sachs, "the beauty which he (the author) gives to his work as a narcissistic compensation for his self-elimination—therefore tending toward keeping the interest centered on one's own self" (p. 166). That mankind tends to "look upon what he has done and find it good"—narcissistically soothing—is unquestionably true, but no more true in the realm of literature than of carpentry or of child producing! According to the testimony of the poets themselves, if their words are worth anything, "beauty" is the resultant of inherent ability and indefatigable and painstaking effort. And once more, there is no single explanation of what will motivate men to make that required effort.

"The Creative Unconscious" is so well written, in such a lucid and stimulating style that Hanns Sachs' "guilt feeling should no longer make him feel an outcast," since his "expressed" ideas make such a direct appeal to the reader's "conscious." There are many ideas both developed and suggested which make this reviewer wish—not a repressed wish—that he could discuss their significance and implications with the conscious (or unconscious) of the author. The major objection to this whole volume is not to the *fact* that repressed wishes manifest themselves in art but to the *interpretation* of this fact according to a static-formalized-dynamism.

S. H. KRAINES, M. D. (Major, M. C.),
Camp Hood, Texas.

ELEVENTH ANNUAL CONFERENCE ON JUVENILE DELINQUENCY. Sponsored by the Division for Delinquency Prevention of the Department of Public Welfare of the State of Illinois in cooperation with the Big Brother and Big Sister Associations of Illinois. (Chicago: Department of Public Welfare, 1942.)

This report of the eleventh Annual Conference on Delinquency Prevention presents ideas, theories and views of twenty-nine different speakers.

The Conference considered eight aspects of the problem. (1) The reaction of Youth to the present crisis; (2) How community planning and projects might meet these problems; (3) Education problems relative to the present delinquency situation, (4) The

challenge of delinquency to religion; (5) Present day problems of delinquency in the State of Illinois; (6) The Big Brother and Big Sister Associations; (7) The problems of Youth in a time of war; (8) Youth looks for leadership.

One cannot help feeling from the review of these topics that the title of the Conference is more traditional than descriptive. One cannot deny, however, that with such men as Dr. Mandel Sherman, of the University of Chicago, Dr. J. J. B. Morgan, of Northwestern University, and Dr. William Johnson, Superintendent of Schools in Chicago, giving addresses and leading the discussions many worthwhile ideas would be recorded. In spite of the fact that these addresses are rather general they nevertheless are well worth reading and some study.

The section on "Meeting the Problem of Delinquency Prevention In Our Present Crisis" has many practical aspects. It discusses what is being done for handicapped children and delinquent children in both urban and rural areas.

The section on Big Brother and Big Sister work is disappointing. No attempt has been made to explain the actual techniques used in their approach of social work to boys and girls. It leaves one with the impression that all this work is carried on as a purely volunteer enterprise, rather than bringing out the fact that there is a real professional basis to the work.

We would like to draw especial attention to the closing speech of the Conference, delivered by Dr. James S. Plant, Director, Essex County Juvenile Clinic, Newark, N. J. Rather than a talk on "Delinquency" it is a candid portrait of the delinquency of so-called experts in the field of delinquency. It "housecleans" a lot of ideas concerning this subject which needed to be reconsidered in the light of more recent findings.

Delinquency is a complex social problem. Its understanding requires intensive study, and dealing with it requires special approaches. Why do we so often insist on asking the persons whose work only touches the fringe of the problem to speak on this subject? The eleventh Annual Conference on Delinquency Prevention, we feel, erred on this point. We would like to suggest that more requests be broadcast and space be given on conference programs for the presentation of research ideas and findings in this important social field. In spite of the implied criticism of the preceding sentences of this paragraph, we nevertheless commend the report for your study and hope that Illinois will continue its conferences and inspire other conferences in both the United States and Canada.

KENNETH ROGERS, PH. D.,
Big Brother Movement,
Toronto, Canada.

THE SUBNORMAL ADOLESCENT GIRL. By *Theodora M. Abel and Elaine F. Kinder.* (New York: Columbia University Press, 1942.)

This volume presents a remarkably good picture of this particular segment of our society and of its intimate interrelationship with what we consider to be the normal group. The style is unusually clear and conveys much of the enthusiasm and interest of the authors, who, for purposes of clarification, subdivide the book largely on the basis of the social setting in which one finds the subnormal adolescent girl. This portion is preceded by an opening chapter in which she is discussed from the standpoint of her thinking processes, especially insofar as they deviate from the norm of our society. The body of the book, as stated, considers the subnormal girl in the home, school, industry and institution. Each of these sections displays a real appreciation of the problems facing the subnormal in our society. The variety of social pressures which impinge themselves on the subnormal girl would appear to aggravate rather than alleviate the already handicapped girl. The authors, through their display of the major points of social pressure, offer much that would appear to be constructive. The latter part of the book considers the especial problems of the seriously maladjusted girl, the community's problem, and a final chapter on the current thinking as to the ætiological background of subnormality. Perhaps the most outstanding feature of this work is its constant consideration of the subnormal with reference to the milieu,—so that one is constantly aware of a reality basis.

The authors should be congratulated on the presentation of a timely and useful work. An extensive bibliography is appended.

FREDERICK H. ALLEN, M. D.,
Child Guidance Clinic,
Philadelphia, Pa.

PERSONALITY AND SEXUALITY OF THE PHYSICALLY HANDICAPPED WOMAN. By *Carney Landis and M. Marjorie Bolles.* (New York: Harper & Bros., 1942.)

One hundred physically handicapped women between 17 and 30 years of age, all of whom had been handicapped at the age of 13 or before, were examined. Four groups, consisting of 25 each, were studied relative to the nature of the handicap, namely, spastic paralysis, orthopedic disability, cardiac disease and epilepsy. Age and degree of the handicap varied considerably within all groups. Information was obtained through controlled interview, medical history and Rorschach ink-blot test.

It has been attempted to get pictures of the psychosexual and emotional development of these women, of possible personality types, of the adjustment to the handicap, of relationships between handicap and personality, between handicap and mental deviation. Evaluation scales, tables of vital statistics and tables of intervariable comparisons are given at the end of the book.

Four types of adjustment,—known also in physically not handicapped people,—were found: withdrawal, substitution, obliteration and compensation. The highest number was 48 among the compensatory, the lowest 16 among the obliterative responses.

Some of the results: there was not one person-

ality type in any of the four groups. There were psychosexually mature as well as hyposexual and psychosexually immature girls in the groups. The authors state "In most cases there was no evidence that psychosexuality was an important component in personality formation." The personality manifestations in adulthood showed relation to the age at onset of the handicap and the early home situation; for instance, the individuals who were handicapped during infancy had more imaginary fears, were more dependent on their parents and showed less desire for improvement. Constitutional predispositions appeared to play an outstanding rôle as regards individual differences. Each of these 100 girls experienced her handicap in her own way.

The authors found only a number of old, more popular notions concerning physically handicapped women acceptable. In many instances they do away with such notions. How far all their findings would be verified in a larger number of cases is a moot question. It should be said, though, that the authors have taken pains to keep statements apart from hypotheses. It would be interesting to see a parallel study in physically handicapped men.

EUGEN KAHN, M. D.,
Yale University.

VOCATIONAL GUIDANCE. By *Kenneth H. Rogers.* (Toronto: The Big Brother Movement, 1943.)

This excellent 28-page brochure deals with the need for vocational guidance in Canada, the essentials of an adequate program, and the work of the Big Brother Vocational Guidance Clinic. Tools and techniques employed by the clinic are considered in some detail. The various tests used in the clinic are also listed. This booklet will be of real value to social workers, counselors, teachers and all others interested in the guidance of youth. Copies can be obtained at nominal cost from the Big Brother Movement, 100 Bloor St. W., Toronto, Ont.

M. D. PARMENTER, M. A.,
Ontario College of Education,
Toronto, Canada.

AMERICAN CITIES AND STATES: VARIATION AND CORRELATION IN INSTITUTIONS, ACTIVITIES, AND THE PERSONAL QUALITIES OF THE RESIDENTS. Annals of the New York Academy of Sciences, Vol. XXXIX, Art 4. By *Edward L. Thorndike.* (New York: Academy of Sciences, 1939.)

This article is one of Dr. Thorndike's attempts to apply statistics to moral questions. Specifically it is an effort to produce some objective index or indices for the relative "goodness" of various cities. The cities dealt with are all those in the United States having over 30,000 population in 1930 but excluding the cities over half a million and a few others such as resort cities like Miami and Atlantic City. Thus delimited, the list comprises 295 cities, and for each of them the author has established 296 "items" of a factual sort, each of which is expressible quantitatively. Thus 296 "facts" about each city were obtained, ranging among such varied items as latitude, longitude, population, population density, net debt, average salary of teachers, per capita circulation of the *Literary Digest*, per capita expenditures for health, per capita number of cigar stores, per capita deaths from typhoid, syphilis, diabetes, etc., per capita number of male clergy, male doctors, female doctors, etc., per capita illegitimate births, per capita membership in the Boy Scouts and scores of other such figures.

On the basis of these items, there are computed three indices, G. I. and P., which are described as "indices respectively of the general goodness of life for good people in the community in question, the per capita income of its residents, and their personal qualities of intelligence, morality and care for their families" (p. 236). These indices are obtained by selecting relevant items from the list of 296 and weighting them appropriately.

The various cities are then evaluated by their G. I. and P. scores. The results are not surprising, nor do they appear to differ enough from what most people would guess off hand, to justify such a large expenditure of time and effort. The cities with the highest "general goodness" are found to be Pasadena (score of 24), Montclair, N. J. (20), Cleveland Heights, O. (20), Berkeley, Cal. (19), Brookline, Mass. (19), Evanston, Ill. (18), Oak Park, Ill. (18), Santa Barbara (17) and White Plains, N. Y. (17). The cities with the lowest scores for "goodness," are such cities as Montgomery, Ala. (−18), Meridian, Miss. (−21), Jackson, Miss. (−21), New Orleans, (−17), all the cities in Georgia, all the cities in North and South Carolina and in Tennessee, most of those in Texas and many in Virginia.

For states the same general results occur,—on G. scores California (14), Connecticut (11), New York (7), Oregon (7), New Jersey (7), Massachusetts (7), and Minnesota (7) rank highest; South Carolina (−29), Georgia (−29), Mississippi (−28), Alabama (−25), Louisiana (−24), rank lowest.

The author then goes on to correlate the G scores with the I. (income) and P. (personal qualities of the inhabitants) scores for the various cities and states. This involves a great amount of statistical work but hardly seems to justify the conclusion, (p. 246), that "the variation among cities in goodness of life . . . . is caused largely by two things—the intelligence, morality, family devotion and other desirable personal qualities of the population and their income." In other words the cause of a high G. score is alleged to be high I. and P. scores. Seldom has one seen a more blatant example of a correlation being turned into a causal relation without justification or explanation. Clearly the exact opposite can just as readily be argued from the same facts, namely that it is the "goodness of the cities" which is the *cause* of the high incomes and the high personal qualities of the inhabitants, (high literacy rate for example).

Those who confuse statistics and science will no doubt be impressed by this type of study but as a method it suffers from two fatal defects. Basically it never uncovers anything new,—that Brookline and Berkeley are "good" cities, Jackson and Montgomery are "bad" cities is something that few impartial observers will contradict. Secondly, the method, although apparently scientific, is really an artistic one. The basic criteria on which the scores are based are arbitrarily selected, the fact that there are 296 of them merely multiplies the arbitrary character of each fact that many times. Why should, for example, the latitude and longitude and the number of osteopaths be included, the width of the main street and the amount of marital unfaithfulness be excluded? The selection of items is in the last analysis as intuitive and personal to Dr. Thorndike, as Shelley's poetry was intuitive and personal to Shelley. No amount of elaborate statistical top dressing can turn an intuitive method into a scientific one.

An interesting point, and a significant one, emerges from the author's discussion of church membership. He finds a negative correlation between the goodness of cities and the amount of church membership (p. 294). An allied conclusion is implied in the following statement: "Dentists, designers, artists, engineers, musicians, architects, trained nurses (female) and osteopaths are found in large numbers in the good cities, which have relatively few lawyers, male nurses, veterinaries, clergymen and domestic servants" (p. 290). This result should delight anti-clericals who can use it to prove that church membership and the presence of clergymen keep a city in a backward state. But the pious can also use it, along the line that the clergymen (like the veterinaries), are numerous where they can do the most good, namely in the backward areas. The clergy by stimulating religious activity there, will eventually bring those backward areas up to the level of Thorndike's good cities which formerly, as a matter of historic fact, had a larger per capita church membership than they now have. So both sides to the religious argument can draw a satisfactory conclusion from Thorndike's findings, again showing that unlike a truly scientific method which settles an argument one way or the other, the Thorndike method is an artistic one in that it allows individuals to take from it any meaning they choose to take. Socalled "moral questions" can be treated scientifically, but the Thorndike method is not the method to do it.

C. W. M. Hart, M. A.,
University of Toronto.

Problems of Ageing: Biological and Medical Aspects. Second Edition. By *E. V. Cowdry*, Editor. (Baltimore: Williams & Wilkins, 1942.)

The first edition of "Problems of Ageing" published in 1939, stimulated considerable interest in geriatrics and gerontology. Several comprehensive seminars dealing with these subjects were held in different parts of the country as a direct result of the challenge contained in its pages.

The 1942 edition has been enlarged by the addition of 178 pages and nine new chapters which deal with the respiratory system; the teeth and the jaws; the male secondary sexual organs; the ageing of individual cells; histochemical changes in ageing; psychological guidance for older persons; diagnosis, prophylaxis and treatment in old age; social urgency for research; and quotations dealing with the aged from authors down through the ages selected by C. M. McKay. The chapter on the social urgency for research by E. J. Stieglitz should be required reading for all physicians. Of special interest to psychiatrists are the chapters on the psychological aspects of ageing by W. S. Miles of New Haven; psychological guidance for older persons by G. Lawton, New York City; changes in personality and psychosexual phenomena with age by G. V. Hamilton, Santa Barbara, California. The value of the second edition is enhanced from a utilitarian viewpoint by the addition of the chapter by A. Muellar-Deham, New York, on diagnosis, prophylaxis and treatment in old age.

Each chapter is summarized and has an adequate bibliography. The new edition is significantly improved in content, but several of the new chapters contain typographical errors.

The volume should be available to all who are interested in any phase of the problems of the ageing. It is as valuable for the questions it raises as for the questions it answers. The book is highly recommended.

F. H. Sleeper, M. D.,
Department of Mental Health,
Boston, Mass.

Sex Variants: A Study of Homosexual Patterns. By *George W. Henry*. With Sections Contributed by Specialists in Particular Fields. Sponsored by the Committee for the Study of Sex Variants, Inc. In Two Volumes, with 66 Illustrations and 80 Family Charts. (New York: Paul B. Hoeber, Inc., 1941.)

Ours is indeed a material civilization and we are more likely to be impressed with superficial than with intrinsic values. The average price of a book in these United States being about $3 to $4, one is immediately impressed with a $12.50 book, which accordingly deserves a $12.50 review; at least about 25 pages. This is indeed what the reviewer has done. But alas and alack! A reviewer proposes and an editor disposes, for by return mail came back the editor's sharp admonition that the review must be cut down to only a few columns which is the most that may be allowed even to Abraham Myerson in criticizing psychoanalysis. To comply with this, the review is presented here in the form of tabulated critical statements with much of the discussional material of necessity being omitted. Admittedly a vast amount of work must have gone into the preparation of these two volumes, and the reviewer would be last one to deny the author full

credit for it. Yet as one studies the contents carefully, the faults and limitations become glaringly real.

1. The material is presented as if having come out from a vacuum. Not only is there no review of the subject up-to-date—a procedure followed in all scientific studies—but there is no evidence that the author has perused or in any way utilized the knowledge of the literature as a background for his studies, with the result that a great deal of material presented here as if new is what may be called old stuff. If the committee that sponsored the project, had spent the money making available to English readers an unabridged translation of Hirschfeld's volume, it would have contributed more to the advancement of the subject than by presentation of the two volumes under discussion.

2. The claims notwithstanding, the material presented is entirely at the descriptive level. This was inevitable since the subjects were given on the average but two or three interviews, and a social investigation, none of which in the nature of things could give anything but superficial results. The reviewer fails to see the superiority of these histories over, say, those studied by Hirschfeld. In many respects these histories are decidely inferior to Hirschfeld's material; which goes back to thirty years ago. And psychoanalytic literature is full of many well analyzed cases. All in all, the reviewer feels that a hundred or a thousand, or even ten thousand cases, superficially studied, can never lead to any other than superficial conclusions; any more than a study of a thousand miles of ocean surface can reveal what goes on in the depths five miles below the surface. It would have been much better to have 10 cases 80 pages long than 80 cases each 10 pages long. That some of the subjects interviewed have sensed the superficiality and coldness of the approach is evidenced by the reactions of some of them. Howard N. (p. 499) who shows himself to be very sensitive of the feelings of other people in relation to himself exclaims (p. 518) to the physician, "You sit there and . . . . offer nothing of yourself. It's like talking to a dictaphone. I have been fairly frank, but there are things I have not told you." This outburst was taken to show Howard N's. dependence upon others, as perhaps it does. But does it not also show that the doctor's attitude toward this particular person was not the sort of attitude to bring about the best results?

A lack of real sympathy is evidenced by certain remarks which seem wholly unnecessary. For example, Dr. Henry says of Jacob L. (p. 75): "In his attitude, posture and gait there is a mixture of the defiance and the slinking of the social outcast." The term "social outcast" seems entirely unnecessary here. There is no real evidence of Jacob's being a social outcast in all the material given, nor is there any indication that he regards himself as a social outcast. It is Dr. Henry who regards homosexuals as social outcasts; not a very promising approach for one who tries to understand a group of human beings.

3. Of the several appendices given, Appendix II provides us with figures on masculinity-femininity tests. One gets very little out of this beyond the conclusion that the sex variant is psychologically intermediate between male and female. This, however, is nothing new to the student of the subject, since Hirschfeld and others came to a similar conclusion 30 and more years ago. Appendix III gives the physical characteristics suggesting masculinity and femininity. Here the findings with reference to primary and secondary sex characteristics are not essentially different from those stated by Hirschfeld and, one might add, are not as explicit or as detailed. Why one should undertake to repeat tests that have already been well established and proven is more than the reviewer can understand. Appendix IV deals with anthropological data. These are contributory to and support the findings of Appendix III already mentioned, and like them may also be found in works of other students. Appendix V gives data on internal pelvic dimensions of sex variants. This is a decidedly worthwhile attempt, for very little has been done on the subject; the conclusions, however, while suggestive, are not characteristic and at best point only toward the findings of Appendices III and IV. Appendix VI, "The Gynecology of Homosexuality," by the remarkable Dr. Robert Latou Dickinson, is one of the finest pieces of work that it has been the reviewer's privilege to read in many a year. It is an adventure of the most intriguing kind. In reading Dr. Dickinson's contribution one feels himself in the presence of a keen and highly trained intelligence that brilliantly illumines the obscure corners of a most obscure problem. The pen drawings and tracings are very graphic. Appendix VII is a glossary of the language of homosexuality by G. Legman. It is very well done, though some of the homosexuals the reviewer has known would object to some definitions and undoubtedly miss some words as well (the meat market, to goon, to take a picture, 'elegant,' snatch, bundle, white owl, cream, chew-job, gobble the goo, etc.).

4. Besides these appendices, there are attached to each individual case minor appendices. One of these is the heredity chart. It is very prettily arranged, squares here, white and black, polka-dotted; but the reader will have some difficulty figuring out what it all means, for the author nowhere discusses its significance either for the particular individual or for the problems of homosexuality as a whole. It thus remains something nice to look at but without much point or significance.

5. The physical examination is another appendix, very well done indeed if the author would only discuss its meaning, but this again is lacking. The reader would like to know, for instance, the meaning of such statements as "A hairless, smooth-skinned type with five pointed face; oblique eyes, small mouth, slightly sullen expression, slightly curved lips, ears partially adherent; feminine pubic hair; scrotal implant; marked anus angle" (p. 106). He would like to know which of these features are general, which are masculine, which are feminine or show a tendency toward homosexuality.

In a few cases examinations of semen were made, but the significance of the findings is not discussed. Similarly with the x-ray examinations, the data are interesting and very valuable, for very little has been done on the subject; but as presented individually they reveal little of significance. Thus for the same case we have the statement that the pelvis is in the main quite characteristically masculine; but how this accords with the previously recorded finding in the physical examination that the pubic hair is feminine, is not discussed. Or how is one to interpret a statement about a certain subject (pp. 283-289) referring to his innate effeminacy, yet having a large phallus? It isn't difficult to see here how very confusing all this is to the reader who seeks information and who is likely to be perplexed by the wealth of uncorrelated and uninterpreted material.

6. The case material is divided in the instance of each sex into three sections: the bisexual, the homosexual, and the narcistic. The first two designations are purely descriptive and disregard mechanisms. What decides the author to put a case into the bisexual or the homosexual group is, according to him, the extent to which it deviates from heterosexual adjustment. It may therefore have been expected for the sake of precision and clarity that in the group of bisexuals would be included all those cases that have had any sort of heterosexual adjustment along with homosexual behavior, and in the homosexual group all those whose sexual activity has been entirely limited to homosexuality (the absolute homosexual). Actually, however, the author has gone about it in a somewhat different way. He evidently includes in the group of bisexuals those who either maintain a married status or who for considerable periods of time have maintained heterosexual relations. It is apparent that he does not include under this heading homosexual persons who at any time have had heterosexual relations, because a number of his homosexual cases recite episodes in which they had sexual relations with women, maintained erection, were potent, and derived physical pleasure from normal coitus. The reviewer agrees with the author that all of these classifications are necessarily somewhat arbitrary; still there is a limit even to arbitrariness, and it only confuses the reader to find in both groups subjects that look and behave so much alike. It would have been simpler to make a sharp division between these two groups and include in the group of homosexuals only those whose sex life has been entirely homosexual, and divide the bisexuals into a number of sub-groups.

7. As regards the group labeled "Narcissistic," the reason for the label and the division is not clearly given by the author; all he states is that it includes narcistic and those who show eccentricities in psychosexual behavior. From an examination of the "Narcissistic" cases, it is impossible to tell why they are so labeled. One of them has been married twice; several of them are transvestitists; some are rather typical bums; most of them have had sexual relations with women. One has two children; one is given to hysterical attacks; one has fits; some are parasitic; and some are moderately psychopathic (male prostitutes, theft, etc.). In some cases passivity and self-admiration predominate, but in others it is difficult to see any narcistic factor, and one wonders what the author means by "Narcissistic." Here as in many places elsewhere, the author uses strictly psychoanalytic terms in a lay, popular, and non-psychoanalytic sense—to the confusion of the text and the reader. For in a psychoanalytic sense narcism does not mean selfishness or eccentricity, but a perversion in which the ego becomes libidinally cathected. Thus viewed all homosexuality is narcistic, whether a particular individual is selfish or altruistic, eccentric or inconspicuous in his behavior, and whether he is bisexual or absolutely homosexual. What selfishness is there, for instance, in the case of Regina C. who is essentially sympathetic, would like to do something for the betterment of humanity, to found homes for women who have been prostitutes, etc.?

8. There is much evidence throughout the book that many of the subjects have taken Dr. Henry for a ride, for he has accepted many of the subject's statements at their face value. The gullibility appears to be particularly prominent in regard to the family history, wherein the background is embellished and painted according to one's fancy. To conceal the true facts which may be unpleasant and to present a more appealing picture, the homosexual will often make statements that are entirely misleading. A small shack on the river front is presented as a large country estate; a forefather who in the Civil War was a sergeant becomes a Colonel or a General. If the subject feels that the interviewer emphasizes the problem of dominance, he will obligingly accommodate by coloring the picture as expected. Dr. Henry's technique and approach does not allow for much verification. One will never get to know homosexuals by merely interviewing them; one has to know them socially and personally, not as subjects and patients, but as friends as well.

9. The statements made notwithstanding and though all the material is given in the first person, there is little spontaneity of expression in the cases. The reader needs but to read a few pages to begin to feel the lack of spontaneity; for the sameness, monotony and orderliness of recitation in all cases soon begin to tell a different story. One feels that what we have here is not a spontaneous, free, wholehearted account given by a subject without prodding, but rather answers to set questions or the results of carefully guided interviews designed to elicit definite and specific information and no other; and that all this was later cleverly re-written in the first person to give the impression of spontaneity. On careful study there appears to be very little spontaneity and the conclusion is inescapable that instead of an impartial objective study we have here a study that elicits the type of material that would fit the author's own preconceived ideas on the subject. This selectivity is further evident in the type of cases collected for presentation. The cases chosen are all cases that have been homosexual from their

early years; we find no cases presented in which homosexuality came later in life.

10. The author's statement that a modified "free association method" was used in obtaining the material is, like his use of psychoanalytic terms, at best misleading. An interview face to face, however free the subject may be allowed to talk, is *not* free association in the sense used in psychoanalysis. Correctly, free association as practiced in psychotherapy, brings forth material that is nowhere found in the cases presented by Dr. Henry. For instance, some of the subjects have described their addiction to and the pleasure they derived from masturbation; some would say that they felt very guilty about the practice even if it was at the same time enjoyable. But nowhere in these cases will the reader find the reasons for the pleasure or guilt. Psychoanalytic, not descriptive, study of cases universally provides the answer, which is that masturbation is accompanied by unconscious phantasies which supply the pleasure element, but that since these phantasies stem from the Œdipus situation, they also carry guilt. Nor does one find in the material presented anything approaching a definitive discussion of these unconscious phantasies, for the reason that this requires the exploration of the unconscious, which cannot be done by the method used by the author, a method that can only bring forth purely conscious, therefore superficial and merely descriptive.

11. The attempt to explain the etiology of homosexuality in terms of conflicts falls much short of the desired aim, for the author's explanations are entirely general and superficial and could apply to most any other neuroses: groping for affection, dominance of the mother (or father), rebellion against the hypocrisy of the family, physical insecurity, mother or father attachment, desire to torment mother for lack of affection toward the subject. Many of these statements are pure tautologies: homosexuality as an expression of innate virility; of unsuccessful struggle for power; of impotence in the spouse; of excessive narcism; resorting to homosexuality as a source of pleasure; disillusionment with heterosexuality; and finally, the oldest cliché of them all, that father wanted a little girl but instead a boy was born. Specifically, how all these conditions drove the individual into homosexuality is nowhere given. These are Dr. Henry's "impressions" and the reader can take them for what they are worth. The above is a fair illustration of the manner in which Dr. Henry utilizes and interprets the case material. Though the text is purely descriptive, he attempts throughout to interpret it in a widest psychoanalytic sense. Rather than help, he actually does disservice to psychoanalysis by drawing large conclusions from small premises. The juggling and manipulating of psychoanalytic terms is strained to the utmost and often brings forth conclusions that can only be described as weird and incomprehensible. This is especially seen in the variety of interpretations he offers to explain the etiology of homosexuality.

As stated, tautology abounds throughout the material. In the case of one woman subject it is stated that she has become homosexual because of the inability to submit to men, a reaction which is obvious from the fact that she is homosexual; but if the reader searches the pages for an answer to the question, why it was that of all women she was one who found herself unable to submit to men, no answer is found. The same is true of men. Had Dr. Henry taken advantage of the extant psychoanalytic literature, he would have learned that fear and hate of the opposite partner often block the road to heterosexuality and drive the individual to homosexuality; and these, fear and hate, have specific psychogeneses. When Dr. Henry's subject mentions fear of women, this is explained by the author as an expression of insecurity or guilty feelings. The explanations offered are too superficial for anyone to secure an understanding of basic etiology.

12. While various perversive practices are given, nothing is stated of their psychogenesis or their position and significance in the emotional life of the individuals in question. Nowhere is there any explanation offered as to *why* this man prefers fellatio while another prefers pedication but abhors fellatio; why this subject prefers fellatio and must swallow the semen without which act he cannot get an orgasm while another stops short of swallowing. This type of insight is completely lacking in these case histories. One of the reviewer's homosexual patients who read the book made the following comments: "The book has opened my eyes to the realization that mine is not a personal, but a social problem as well; and this has been helpful. But I find many limitations particularly with reference to the psychogeneses of the sexual acts. These are poorly described. Sometimes even when the nature of a relationship is labeled pederasty, fellatio, etc., no indication is given as to which was active and which person was passive, which was the aggressor and which submissive. Even though the sex act is occasionally described in intimate detail, very little attention is given to detail in emotional reactions. The positions taken in a sex act are secondary to the emotions of the individual. One may be in a superior position, dominant position, and yet have an attitude of ministering to the sensual pleasure of the other person, which is really a submissive attitude. Little of the emotional experience is described. We see the subject through sex-colored glasses, as it were. The picture presented is of a sex variant in a "setting" whereas the picture should reveal the individual, who, having certain variant sexual tendencies, also has certain emotional reactions in harmony with or in conflict with his sex life, his social life, and his entire cultural make-up. Cause and effect lie buried under a generous frosting of professional terminology and conventional labeling. One senses only patterns, not people. The comments seem to be paper and pencil solutions.

"In addition to the dearth of material, there is occasionally a more serious offense; that of misstatement. On page 387 Rafael says, 'I slept with my mother until I was nine. Even during a whole year when father was home. *I slept in the same*

room with them.' Yet when Dr. Henry comments on this, he makes the following misstatement (p. 390), 'He was spoiled by his mother and *slept with her* even when the father was home.' The italics are mine; the latter indicate the conflicting phrases. Another type of misstatement is illustrated when Leo S. (p. 363) says, 'Passive sodomy is somewhat painful, but I think the pain may increase the pleasure of the orgasm.' His statement is one of indicating a possibility. Yet Dr. Henry states it as a solid fact (p. 369): 'The pain of passive sodomy increased the pleasure of the orgasm.' Here it seems that Dr. Henry not only takes for granted the individual's adherence to the truth, but jumps to conclusions and accepts their suspicions as facts.

"To an outsider, who is without actual experience, it fails to give a well proportioned picture. It may later be a drawback to any outsider's understanding.

"There often appears to be a lack of correlation between the author's comment and the subject's account. Thus in the case of Gene he states (p. 216): 'His paternal grandmother . . . . liked to meddle in the affairs of the family. She was credited with having caused the divorce of Gene's parents.' No mention is made of this influence in the divorce at any point in the case record, except this which occurs in the comment."

Nor is there anything given with reference to masturbation beyond the mere mention of it, though masturbation is a very complicated phenomenon and of crucial importance in the whole problem of homosexuality. Without such material the work loses a great deal of its value.

13. Above all, in a study of this type, with a great deal of detail, even if superficial, scattered through many pages, orientation for the reader becomes exceedingly difficult. Legitimately and logically the reader has a right to expect, aside from the objective presentation of the cases proper, something like a synthesis or an integration of the mass of material presented. Incidental and case-by-case comment is not sufficient; a statement of "impressions" is not enough. On the basis of the material presented, we should like to have had Dr. Henry tell us of the primary, secondary, and tertiary characteristics of the homosexual groups as a whole; of their development, their social problems, and their inner emotional life, of the psychology of the perversions and their interrelations; finally, to synthesize all this scattered material into one coherent whole so that out of this would emerge before the reader a concrete picture of homosexuality as a personal and social problem. Without such a correlation and integration, the bare presentation of the material becomes meaningless and resolves itself into an inchoate and amorphous mass without point or significance. The reader is left to his own devices to analyse and synthesize the material, and it is doubtful whether any reader would even attempt to do it. Thus with the most significant part and the essential purpose of any study—to carry a lesson—omitted, what value there may be in the collected material, falls to pieces. It is entirely insufficient for the author to state that he plans a third volume in which (the statement is not clear) there might be such a discussion. The place for such a discussion is in the present volumes, not a forthcoming volume that plans to consider other things besides.

The two volumes are well printed and exceptionally well edited. The descriptive language is not always in the best of tact. The description of a negro subject that his face resembles a gorilla is not calculated to quicken the sympathies of negro readers, and for that matter, some of the white readers.

BEN KARPMAN, M. D.,
Saint Elizabeths Hospital,
Washington, D. C.

EXTRAMURAL PSYCHIATRY: ITS ORGANIZATION AND OBJECTIVES. By *M. I. Grebliovsky.* (Moscow, U.S.S.R.: State Medical Publishing Company, 1941.)

The author is the chief psychiatrist of the Moscow Mental Hygiene Clinic, and in his monograph he reviews the development of extramural psychiatry in the Soviet Union. The monograph is in the form of a thesis for an advanced degree of a Candidate of Medical Science and has the approval of the Scientific Committee of the Federal Public Health Service. From that one concludes that the author's data are authentic and carefully compiled.

The monograph reveals the perfectly amazing development of extramural psychiatry in the Soviet Union during the past two decades. In 1893, V. Y. Yakovenko made the first mental hygiene survey of the mentally sick in the Moscow Province. Only 7 per cent of the mentally ill were found to be in mental institutions. Seventy-nine per cent of the ill were taken care of by relatives on parole, and 13 per cent were under family care. He brought out the same deplorable state of affairs in the care of the mentally sick which was revealed in a similar survey made by Thomas Salmon in America some twenty years later. This survey demonstrated conclusively, however, that 75 per cent of mentally ill patients may be taken care of outside of institutions. It became obvious as a result of this study that there was a great necessity for the development of extramural psychiatry, since most of the mentally ill patients were not in the institutions but in the community.

Twenty years later another psychiatrist, Prosoroff, made a keen observation that the development of extramural psychiatry ought to be of great help to psychiatry as such. By studying the patient in his own environment, where he was brought up, lived, and worked, the psychiatrist may obtain valuable data on the influence of social and cultural factors on the development, if not the causation, of the mental breakdowns.

In spite of the general interest in extramural psychiatry, its development in pre-revolutionary Russia was slow and limited to the Moscow district. The real development of extramural psychiatry began quite early in the life of the young republic when in 1919 a psychiatric conference was called in Moscow to discuss the problems of organization of

out-patient psychiatric help. In line with the recommendations of the committee, Moscow was divided into eight districts, each in charge of a psychiatrist whose function was to help people outside of institutions. The regional offices gradually increased in number of visits and personnel until in 1923 when Rosenstein proposed the organization of mental hygiene clinics throughout the Soviet Union to do preventive rather than follow-up work. Such clinics were established in 1924 and developed very rapidly so that in 1941 there were in the Soviet Union 719 neuropsychiatric clinics, of which 667 were part of general medical clinics and 52 were independent mental hygiene clinics. It is estimated that 0.5 visits per person is expected to a psychiatric clinic in a large city.

Describing the clinics the author points out the great variation in quality and organization of the work in the various clinics. In some clinics there is emphasis on psychotherapy, in others there is interest in biological factors and physiology. The author points out that the independent mental hygiene clinics are much more effective than those which are part of a general medical clinic. An independent mental hygiene clinic can have a much wider function, it serves a larger area and is not hampered in its development by the general policy of the medical clinic. The independent mental hygiene clinics are apparently in the nature of large regional mental hygiene institutes rather than the usual run of mental hygiene clinics in this country. Such institutes have provisions for in-patient care and day care for patients who are very neurotic and find it difficult to adjust themselves to the community. They have special provisions for taking care of acutely disturbed patients with transitory psychotic episodes. They also function occasionally as reception centers for the larger mental hospitals. Throughout the monograph the author stresses that the extramural clinics are not extensions of the mental hospitals but are entirely independent of them. In a sense the mental hospital becomes the final step in a chain of graded types of psychiatric clinics serving the community.

Chapters IV and VI are devoted to the organization of mental hygiene clinics and the advisability of having a small in-patient service in connection with such clinics. The author divides the clinics into four groups, depending upon the number of visits. The small clinics limit themselves to three departments: psychiatry, neurology, and drug addiction (alcoholism). The larger clinics, with over 50,000 visits a year, have also the other departments of medico-legal testimony, child guidance, and physiotherpy, as well as provisions for in-patient care.

The author is quite upset about the question of child psychiatry in the Soviet Union. He feels that it is split up amongst too many specialties, such as metabolism, pediatrics, psychiatry, etc., so that it loses a good deal of its effectiveness. He feels very strongly that child psychiatry should be a part of general mental hygiene clinics, as in such clinics provisions can be developed for foster-home care, tutoring, play therapy, various types of environmental manipulation, placement, etc. The departments of pediatrics do not usually have the necessary social outlook, as they are primarily interested in the problems of growth, nutrition and metabolism.

There is a special chapter on the in-patient services in connection with the mental hygiene clinics, which is of special interest to the reviewer. Time and again you will find patients who in the course of treatment become very upset, who need some type of competent psychiatric care for a few days, and yet who would be only made worse by sending them to regular state hospitals. A small, well-organized, therapeutically-oriented in-patient service would be of inestimable value for such patients, and apparently most of the mental hygiene clinics in the Soviet Union possess such small, well-organized, in-patient facilities.

There are short chapters on the development of family care, occupational therapy, and medico-legal testimony. The concluding chapter deals with illustrative case material in which the author demonstrates the various steps in the treatment of the mentally ill patients by the various special facilities developed in connection with the mental hygiene clinics. It is interesting that the author does not mention anything about psychiatric social work, and apparently it is largely done by psychiatric nurses and sometimes by the psychiatrists themselves. It is quite amusing that the same problems which one finds in American psychiatry also worry the author a great deal. He bemoans the fact that they do not have enough well-trained young psychiatrists and that there is too wide a split between psychiatry and neurology, for which he blames neurologists. He feels that child guidance has not been properly handled.

The language of the author is succinct, terse, and virile. There are no vague generalities, and the whole monograph is obviously the work of a first-class clinician and an advanced thinker in the field of mental hygiene.

J. Kasanin, M. D.,
Mount Zion Hospital,
San Francisco, Cal.

A Theory of Meaning Analyzed. Two Papers from the Second American Congress of General Semantics. By *Thomas Clark Pollock and John Gordon Spaulding.* With a supplementary paper on lexicography by *Allen Walker Read.* (Chicago: The Institute of General Semantics, 1942.)

This monograph deals with a topic that is much in vogue at the present time. Ever since the appearance of Ogden and Richards' "The Meaning of Meaning" in 1923, there has been a steadily mounting interest in questions of semantics both within and without academic walls. The last decade has witnessed a veritable spate of books on the subject, extending all the way from popular treatises like Chase's "The Tyranny of Words" to technical studies like Carnap's "The Logical Syntax of Language." Not long ago the Institute of General

Semantics was established in Chicago under the direction of Alfred Korzybski (author of "Science and Sanity") for the sole purpose of promoting research in this field. The present publication seems to be a fair sample of the sort of thing undertaken by those associated with the Institute.

The theory of meaning singled out for examination here is that propounded by I. A. Richards in "The Meaning of Meaning, Principles of Literary Criticism," and "Interpretation in Teaching." Mr. Richards was one of the first to employ the familiar distinction between the "scientific" and the "emotive" uses of language. The former is involved whenever words are used to symbolize a reference to a *referent, i. e.* an actual or possible state of affairs. The latter arises whenever words are used to express or excite feelings and attitudes. Since the characteristics of truth and falsity apply only to scientific discourse, literature and poetry function wholly on the emotive level.

Approaching this theory from a literary standpoint, Professors Pollock and Spaulding object to it on several grounds. Professor Pollock argues that Richards' classification of language usage into scientific and emotive is oversimplified, and fails to account for the way in which words are employed in prose fiction and drama. "It gives neither a satisfactory analysis of nor a useful approach to the way words are used in, say, 'Madame Bovary,' or 'Lord Jim,' or 'The Egoist.'" The authors of these works are not merely trying to express their emotions or arouse feelings in the minds of their readers. They are endeavouring to symbolize and communicate a highly complex and subtle "referent." Yet their language is not scientific, and cannot be evaluated properly in a scientific context. Mr. Richards' scheme leaves no room for the treatment of such "mixed" linguistic forms.

Both Pollock and Spaulding agree that in addition to its oversimplification, Mr. Richards' theory of meaning commits the cardinal error of "elementalism." This is a symbolic sin against which Korzybski has preached at great length in "Science and Sanity." Briefly, it is the fallacy of assuming that words like "mind," "thought," "emotion," "attitude," etc., denote discrete elements with fixed and invariant properties. The classic illustration of this error is Aristotle's "Law of Identity," which Professor Spaulding contends is implicit in Richards' position. It reveals itself in his assumption that there is an ultimate distinction between thought and feeling, that the true-false dichotomy is absolute, that it is possible to define *the* meaning of meaning, etc. It likewise contributes to certain inconsistencies which appear when one compares Mr. Richards' earlier with his later writings. In the final section of his paper Professor Pollock comments on several of these discrepancies.

While many of the criticisms advanced by the authors seem well taken, the present reviewer confesses to finding their treatment on the whole rather thin and inconclusive. Very little is said about the positive basis from which the criticisms are made. Presumably this is to be discovered in "Science and Sanity." But not every reader of that document has been enlightened by it. Consequently, the uninitiated are likely to feel that the upshot of the monograph is entirely negative; and they may even be vexed by a certain amount of superfluous repetition that crops up at various points. Perhaps more could not have been accomplished by the authors within so brief a compass. At any rate it is clear that much constructive work remains to be done before semantics can hope to rank as a science.

T. A. Goudge, Ph. D.,
University of Toronto.

Psychology for the Fighting Man. Prepared by a Committee of the National Research Council with the collaboration of *Science Service*. (Washington: The Infantry Journal, 1943.)

In the spate of manuals, bulletins, etc., which have accumulated during the war this pocket brochure is not just another set of rules or guide to the building of morale which may be dismissed with a glance. It is a serious piece of work with a vast deal of vital instruction and information in its closely packed pages; and as the editors remark "You do not have to read the chapters in the order in which they are printed." By suggesting that the soldier pick out from the table of contents a topic which interests him, the editors resort to a clever device which presumably may lead to a perusual of the entire text.

Although in its original form a compilation in which fifty or more leading authorities in their fields participated, these articles have been skilfully edited and fitted together into a smoothly running narrative by Professor E. G. Boring of Harvard University, with the assistance of Marjorie Van De Water of *Science Service*. It is a book for the man in uniform, "whether a private, a sailor, a shavetail, a captain or a lieutenant-general, who wants to know his own physical and mental limitations even better than some of the military experts claim to know the psychology of our enemies. . . . . Almost every chapter describes some practical ideas, which if used by the fighting man, will increase his effectiveness against the enemy, improve his personal adjustment and give him an ever better chance to stay off the casualty lists than he already has."

The chapter headings are as follows:

I: Psychology and Combat.
II: Sight as a Weapon.
III: Seeing in the Dark.
IV: Color and Camouflage.
V: Hearing as a Tool in Warfare.
VI: Smell—A Sentry.
VII: The Sense of Position and the Sense of Direction.
VIII: The Right Soldier in the Right Job.
IX: Training Makes the Soldier.
X: How the Army Teaches.
XI: Efficiency in the Army.
XII: Heat, Cold, Oxygen and Stimulants.
XIII: Morale.

XIV: Food and Sex as Military Problems.
XV: The Soldier's Personal Adjustment.
XVI: Leadership.
XVII: Mobs and Panic.
XVIII: Differences Among Races and Peoples.
XIX: Rumor.
XX: Psychological Warfare.

All those that had to do with the making of this book contributed their labour as a war service, which makes it possible to sell the brochure for twenty-five cents. Dr. Leonard Carmichael, president of Tufts College, and a member of the National Research Council, writes in his review of this work in *Science:* "It is not too much to say that 'Phychology for the Fighting Man' may actually save the life of some of its readers. It will almost certainly raise the moral of all who read it. The reason that it will have this direct result is that it will help every soldier who reads it to understand and use more effectively those most complicated 'instrumentalities of warfare,' his own human reactions."

One can heartily agree with this opinion.

C. B. F.

IN MEMORIAM

CLIFFORD W. BEERS [1]

1876–1943

Clifford W. Beers has passed on, but Beers cannot really pass. He takes his place with Pinel and Dix in a triumvirate of immortals whose influence has been so deep that it continues to roll on and on, receiving a constant onward impulse from the rebound of the good that they do.

An obituary of Beers should be an epilogue and not a résumé of his life, since the story of his life is too well known to benefit by repetition. Beers' career seems to have ended as it began in a mental hospital, but the similarity is only a superficial one. Four years ago he began to show signs of organic strain, possibly in part as a result of a long and strenuous career. A glaucoma that had been latent for some time threatened to flare up under the stress of his current responsibilities and arteriosclerosis further burdened him to a point where on the advice of his physician he relinquished his active duties as secretary of The National Committee for Mental Hygiene and became its honorary secretary. At that time he discussed with me the problems involved in making the adjustment from a busy life to one in which he could respond to the inclinations of the day. In order further to cope with these problems, he journeyed to Providence seeking the advice of his long time friend, Dr. Arthur H. Ruggles, and on his own request he was afforded the facilities of Butler Hospital as a setting from which new plans might be made. These plans never materialized. His arteriosclerosis was more advanced than had been realized and there soon came to be grave doubt whether Beers could return to any such vigorous function as had been characteristic of his past. There at Butler his career ended, July 9, 1943, at the age of 67.

There are those who from time to time in the course of his career have raised the question whether Beers fully recovered from his original illness. If the measure of recovery is return to mediocrity then of course his recovery would have been incomplete. If recovery is measured by complete rationality one may well ask—who is sane? If it implies that unusual output of vigor and energy and imagination are expressions of incomplete recovery then a large proportion of our contemporary as well as past leaders and contributors to human welfare must be considered as functioning near their margin. Perphaps they do work close to the brink to the great good of human kind and hazard to themselves. If one questions the exactness of some of his retrospective account, let him look into the exactness of any retrospective account. Beers' story may not have been in one hundred per cent agreement with the reports of an objective scientific observer as to what happened and why, but his story contains an element that a disinterested observer could not have caught—his feelings. His account of his illness stands not as a scientific case story, but as a moving experience, a depiction of what he went through, a story that no observer could have written. Its truth lies in its effects.

Those who lived close to Beers saw an instance of how potent in the stability of man is the focus of interest about which he organizes his life. This is in a passing way the essence of occupational therapy. For Beers his mission was such an integrating focus and his effectiveness and whole-hearted action were a response to the opportunity to pursue this mission. In assaying his effectiveness one must not lose sight of his loyal, self-effacing and devoted wife, whose gentle and unobtrusive support at the right time and place was intuitively given. He thus never felt alone when circumstances about him failed to give him the backing that he needed. In

[1] An excellent photograph of Mr. Beers appeared in the Nov., 1933, issue of the JOURNAL in connection with an editorial comment on the occasion of the celebration of the twenty-fifth anniversary of the founding of the Mental Hygiene Movement.

later years when the demands made upon him for the financial support of mental hygiene work were lessened, it was significant that he managed to center his attention on painting as an alternate focus of interest.

Indicative also of Beers' capacity to temper his enthusiasm with wisdom was his continuous dependence upon scientific advisers for the definition of the program of the mental hygiene movement. Indicative of his breadth was his appreciation of the fact that the years preceding a mental disturbance are years of opportunity, often missed, for constructive work by a variety of medical and non-medical functionaries who are in position to influence the life of the patient. And so he came to conceive of mental hygiene as being dependent upon and in the hands of a variety of professional and non-professional persons. Progress in the mental hygiene field accordingly depends upon progress in each of these fields—medicine, social work, education, theology, industry, public health and others. And there is not one of these but has had its foundation, its technical concepts and its community relationships broadened as a result of the movement that Beers initiated.

Beers' own story gave hope to many—both of the mentally ill and of their families who had been crushed by the fear that mental illness is incurable. There are 600,000 hospitalized patients in the United States but a letter or visit from any one of these or his family was always a matter for individual concern and help and never just another case.

Beers was a fluent extemporaneous speaker, excellent at repartee and wonderful for his sense of humor and capacity to tell good ones on himself. Having told the world the worst about himself he could be himself freely where most of us have to be careful to protect the illusions we create.

If Beers had lived three or four thousand years ago he would have been perpetuated in marble and in legend and raised to Mt. Olympus as the god-protector of the insane. That was merely an older way of expressing what we try to express about him today in more abstract fashion. Maybe people generally understood the older way better. At any rate there is still to be achieved a refinement of public understanding and feeling whereby the mentally ill are not considered appropriate subjects for ridicule, neglect or retribution.

GEORGE S. STEVENSON, M. D.

DR. CHARLES MACFIE CAMPBELL[1]

1876–1943

The death of Dr. Charles Macfie Campbell on August 7, 1943, which terminated a long and distinguished career in psychiatry, came as an unexpected shock to his many friends and associates. The members of the Association who saw him at the Detroit meeting in May with his usual energy, keen wit, happy and sparkling countenance, deep interest in the scientific presentations and affairs of the Association, and even his closest Boston associates can hardly believe that Dr. Campbell was suffering from severe attacks of angina pectoris and thoroughly understood that his life span was very limited. This behavior pattern from which, with full knowledge of the seriousness of his physical condition, he gave no evidence of faltering, was characteristic of the self-regulation of the man, his extraordinary integrity of spirit and the lack of need of sympathy from others. These characteristics can be traced back through his entire scientific career.

A fundamental basic training through many years prepared him for the responsibilities of his professional life. A sound classical training in preparatory school in his native Scotland, followed by university studies at the University of Edinburgh from which he received the M. A. degree in 1897, with summer studies in France and Germany, preceded his medical education. In 1902 he received his medical degree, M. B. Ch. B. *summa cum laude* at Edinburgh and was awarded the McCosh Graduates and Medical Bursaries. Following this he studied

[1] Dr. Campbell's portrait appears in the July 1937 issue of the JOURNAL facing his presidential address.

neurology with Pierre Marie and Babinski, worked in the neuropathological laboratory of Nissl, and took courses from Erb, Hoffmann, Kraepelin and von Hippel.

Following a residency at the Royal Edinburgh Infirmary on the service of Dr. Alexander N. Bruce, he came to the United States, joining the staff of the New York Pathological Institute where he remained for three years, at the end of which time he returned to Scotland as an assistant physician at the Royal Edinburgh Asylum under Sir Thomas S. Clouston. In 1908 he returned to the United States where he spent the remainder of his professional career.

Perhaps his periods of living in several lands—Scotland, France, Germany and the United States account in some part for his general broad and liberal attitudes. More probably, however, his great vision as to values was innate and explained his desire to overcome any possible provincialism by wide experiences.

Dr. Campbell was certainly a liberal in the best meaning of this word. He was extraordinarily free from prejudices, desirous that each individual should be able to express his spiritual, cultural and asthetic ideas as he saw fit. Deeply sympathetic toward the underprivileged and most understanding of human frailties, nevertheless he expected from everyone, especially members of the medical profession, as of himself, unfaltering ethical standards. Intrigue, duplicity, evasion or lack of sustained effort were not tolerated in his students or residents. He was a severe taskmaster, not only for himself but also for his subordinates. And so generations of medical students, interns and residents were given a rigorous and sound basic training in psychiatry.

From 1909 when he became an instructor in psychiatry at Cornell University Medical School until his death in 1943 he was continuously engaged in teaching. On his return to the United States in 1908 he first received the appointment of associate at the Psychiatric Institute in New York, remaining at this institution until 1911 at which time he received the degree of M. D. from Edinburgh University, presenting as his thesis a neuropathological study on "Focal Symptoms in General Paralysis."

In anticipation of the opening of the new Phipps Clinic at Johns Hopkins where he was to be associated with Dr. Adolf Meyer, he spent two years at Bloomingdale Hospital. He then became associate director of the Phipps Clinic and associate professor of psychiatry at Johns Hopkins Medical School, remaining in Baltimore until 1920 when he was called to Boston as professor of psychiatry at the Medical School of Harvard University and medical director of the Boston Psychopathic Hospital, which positions he continued to hold until his death.

He became a citizen of the United States in 1918, joining the army as a private for this purpose, intending to join the Medical Reserve Corps of the army, but the armistice occurred before this was consummated.

He was greatly interested in fostering the work of scientific associations and held memberships in the following:

American Medical Association.
N. Y. Psychiatric Society.
Association for Research in Nervous and Mental Diseases.
Boston Society of Psychiatry and Neurology (President 1924).
Eugenic Research Association.
American Psychopathological Association (President 1918).
American Neurological Association.
American Psychiatric Association (President 1937).
New England Society of Psychiatry.
Massachusetts Psychiatric Society (President 1935).
History of Science Society.
American Association of Hospital Social Workers.
British Medical Association.
Royal College of Physicians of Edinburgh.
Sigma Xi.

He was a member of the American Board of Psychiatry and Neurology, serving as vice-president from the date of its organization in 1934, and as its president since 1941. He was a member of the Committee on Psychiatry of the National Research Council, and Psychiatrist of the Medical Advisory Board of Selective Service.

Being in his sixty-seventh year, which is the retiring age at Harvard University, he had resigned his professorship as of August 31, 1943. The Fellows and Overseers of the University voted him the title of Professor Emeritus to date from September 1, 1943. Although the retiring age in the state

service, under which the Boston Psychopathic Hospital functions, is 70 years of age, nevertheless he resigned this position also in order to make available the joint appointment as professor of psychiatry and medical director of the Boston Psychopathic Hospital.

The bibliography of Dr. Campbell's scientific publications includes more than seventy items of which five were in book form. It is significant that his earliest publications dealt with neuropathological and neurological subjects, and that his writings subsequent to 1911 were devoted to matters more definitely psychiatric. Perhaps his most important contribution to psychiatric thought was his article of 1914 entitled "The Mechanism of Some Cases of Manic-Depressive Excitement." This was essentially the first American declaration of the importance of the psychological and situational factors to be considered in the cases of affective disorder. It announced the path which Dr. Campbell was to travel in his clinical investigations of almost thirty years, giving meticulous consideration to the setting in which the patient lived, thought, felt and worked.

Dr. Campbell never sought acclaim by the use of catch phrases, and was always glad to see a point of view accepted and carried on by others. It is therefore significant to note that he was one of the earliest psychiatrists to recognize and to stress the importance of emotions, instinctive drives and problems of personality in the causation of so-called organic syndromes, now commonly labelled psychosomatic disorders. At the same time he was a pioneer in pointing out the relationship of psychiatry to general medicine.

His most definite sphere of interest was in the problem of schizophrenia which he studied intensively during all his Boston period. It is to be greatly regretted that the results of these studies have not been published. It may be assumed that he planned to use the years following his retirement in the presentation of this material.

Even more significant than his numerous writings was the effect of his teaching on the young men and women specializing in psychiatry. To them he imparted his deep faith that the understanding of the individual patient was the foundation on which all psychiatric study must rest and the basis for the therapeutic approach. Day after day and year after year he pointed out to succeeding groups of students and resident physicians the importance of a close physician-patient relationship, and never was there the slightest evidence of lack of intense interest, sympathetic understanding and enthusiasm for the discovery of the meaning of the patients' reactions. His own continuing fascination with the clinical approach could not fail to be contagious, and this influence has been carried to all parts of the country by generations of doctors.

Although he was not a mixer or a joiner in the colloquial meaning of these words, no more companionable man could be imagined. A gifted conversationalist, with the facility to turn a word or phrase in fun, with a twinkle of the eyes and a warming smile, he was a favorite at medical meetings and banquets. He was not a devotee of specific hobbies, but had broad cultural interests, especially in literature and philosophy. He was a rapid reader, with a retentive memory, and an ability to quickly recall matters appropriate to the topic of the moment. No one ever heard him say a word in praise of himself, nor did he encourage others to praise or flatter him. Sympathetic to others, he never sought sympathy for himself, and was disinclined to show his personal problems or sorrows. Even in the last year or two of his life when he was afflicted with anginal pains and knew that his span of life was very short, he shared this knowledge with none of his associates or colleagues. He asked no release from effort or responsibility, nor did the light in his eyes diminish or his exuberance lessen.

In the man himself affection was thus blended with reticence. His heart was not the less warm for not being worn on his sleeve. There was a difference, not always recognized by the world, between the burnished surface and the warm fires within. It was this depth of feeling which bound him to his family, and to his more intimate friends, who knew the signs by which to read it. To the world he was witty, entertaining and widely informed; to his family

and intimate friends he was all this and more—strong in love, patient in understanding, staunch in loyalty.

His ability to help others, so essential to his professional and to his personal relations, was due to his moral quality as well as to his learning and skill. The Golden Rule was instinctive with him. He could always place himself at the center of another's life and make allowances even for what he condemned. He had both integrity and humanity. In his own conduct he was exceedingly scrupulous, in his judgment of men and events he adhered firmly to principle, but at the same time he gave his fellows the benefit of the doubt and ascribed their conduct, sometimes humorously but always sincerely, to some motive with which it was possible to sympathize.

HARRY C. SOLOMON.

From Edinburgh, birthplace of Dr. Campbell, comes the following tribute by Dr. David K. Henderson, professor of psychiatry at the University of Edinburgh and superintendent of the Royal Edinburgh Hospital for Mental Disorders.

PROFESSOR CHARLES MACFIE CAMPBELL

In the AMERICAN JOURNAL OF PSYCHIATRY, July 1937, Dr. William L. Russell gave an excellent biographical sketch of Dr. Campbell's life and scientific career. He mentioned the many important contributions which Dr. Campbell had made to psychiatric literature, stressed the wide range of his knowledge, and yet emphasized how throughout his career Campbell had maintained a steady course, and was never unduly sidetracked by any of all the varied exciting new approaches and formulations which were being heralded. At the same time no one was better informed regarding new developments, could appraise them more critically, and utilize cleverly whatever appealed to his reason and judgment.

It is not my wish or purpose to record again achievements which will be fully and adequately commented on by his American colleagues, but from his own native town of Edinburgh, of which he was so proud, I should like to pay my tribute to the man who exercised a profound influence on my life, and whose untimely passing we all so much deplore. Even yet it seems impossible to believe that Campbell is not with us taking part in all the breath-taking events which are occurring in the world today. He was so vital, so interested in current affairs, so knowledgeable about them, and so good a judge of all the issues and personalities involved that it was always a stimulating event to meet and talk to him, or to have a letter from him.

It was in 1907, when I joined the medical staff at the Royal Edinburgh Hospital for Mental and Nervous Disorders, that I met Campbell first. He had just been appointed as an assistant physician by the late Sir Thomas Clouston who was then physician superintendent. By this time Campbell had had an exceptionally fine training in neurology and psychiatry, and Clouston had a very high opinion of his abilities. It was, however, the spirit and enthusiasm which he put into his work that was so intriguing. I can remember with pleasure the new fascinating world to which he introduced me. Ward rounds under Campbell's guidance were an exciting adventure, he seemed to know everything about his patients, and all their strangenesses and mannerisms and peculiarities were explained and made clear. Strange new terms such as "flight of ideas," "distractibility," "depersonalisation," and the incongruities of mood and manner and thought of the schizophrenic at last became understandable. These, of course, were the days of Kraepelinian differentiation, but even at that time Campbell, having profited by his experience at the Psychiatric Institute, Wards Island, New York, was interpreting his case material in the light of Adolf Meyer's life history and personality studies; in consequence his case records and summaries were a concise presentation of the facts in each individual case which could be understood and worked with. I remember so well how amusingly Campbell used to tell the story of how on one occasion he had prepared a rather lengthy summary of an in-

teresting case which he handed to Sir Thomas Clouston. Clouston had not been accustomed to such meticulous case-work, so glancing at it for a moment or two he returned it to Campbell saying: "But, Campbell it would take me half an hour to read this!" Campbell not only worked hard himself, but he encouraged everyone around him to do the same and it was no easy task to keep in sight of him much less to keep pace with him.

At Wards Island, at the Phipps Clinic, at Bloomingdale, and at Boston his energy remained unabated, and his skillful discussions and demonstrations attracted both students and post-graduates. He was, indeed, a great teacher. He held everyone's attention because he had the happy faculty of being able to clothe what he wanted to say in words which were singularly appropriate and effective. His early training in neurology and histo-pathology provided him with an objective basis which led to clear formulations. Later, when he became interested in the more subjective side, he brought to bear a power of analysis which he never allowed to outdistance the actual facts. In other words he was a brilliant expositor of Meyer's psychobiological conceptions. It was his stable judgment which made him such a trusty advisor both to his patients and colleagues. We all relied on him. He was absolutely fair, honest and considerate—he always said the best of everyone, and although, at times, his criticism could be severe, yet it was invariably constructive and positive. To sit down with him by a bed-side and listen to the rapid and conclusive way in which he examined the patient, and at the same time demonstrated the salient points was a rich clinical experience.

All the go and enthusiasm which he showed in his work was carried over into his daily life. He had the joy of living in his veins, he was the life and soul of many a party. Elsewhere I have remembered excursions in his company to the Potomac, Pimlico, Gullane, and the Highland hills in his native land which he loved so well.

Any tribute to his memory would be incomplete without a note regarding his family life which he so generously shared with so many of us. Perhaps some will remember how in the preface of his stimulating book "Human Personality and Environment" he described it as "a thing of shreds and patches," and in its preparation thanked particularly "the devoted colleague whom I have the honor to call my wife." Dr. and Mrs. Campbell were absolutely devoted to one another and her loss a few years ago was a great blow to him. His sister, Miss Campbell, who lived with them and the family of three daughters and a son constituted a household which it was a joy to visit.

Here in Scotland we join with you in the United States in paying tribute to the memory of a man whom it was a privilege to know, and an honor to call one's friend.

D. K. HENDERSON.